The Journal of the American Medical Association
Published Under the Auspices of the Board of Trustees

Vol. 133, No. 1
Chicago, Illinois
January 4, 1947

Copyright, 1947, by American Medical Association

173

TREATMENT OF EARLY SYPHILIS WITH PENICILLIN

THOMAS H. STERNBERG, M.D.
Los Angeles
and
WILLIAM LEIFER, M.D.
New York

In a previous paper[1] we presented the results of the treatment of early syphilis with the twenty-six weeks' oxophenarsine hydrochloride-bismuth schedule which was adopted by the Army in July 1942. It was shown that this schedule was of relatively low toxicity and yielded a high proportion of satisfactory therapeutic results. Its eventual replacement as the standard therapeutic procedure came about mainly because it failed to meet Army requirements for a short intensive schedule for soldiers under field or combat conditions and because of the demonstration that penicillin was a potent antisyphilitic agent.

Encouraged by the pioneer experiments of Mahoney, Arnold and Harris,[2] the extensive investigations of the Subcommittee on Venereal Disease, National Research Council[3] and certain pilot studies within the Army,[4] the Surgeon General in 1944, on recommendation of the National Research Council, instituted penicillin treatment for all soldiers with early or latent syphilis. The schedule called for 40,000 units of sodium penicillin in aqueous solution or isotonic solution of sodium chloride to be given intramuscularly every three hours for sixty doses, a total of 2,400,000 units in seven and one-half days. The procedure was first put into practice in the European Theater of Operations in June 1944, and in October 1944 it was instituted throughout the entire Army.[5]

The present report is based on an analysis of the records of 1,400 soldiers with early syphilis treated by the foregoing schedule between June 1944 and Feb. 1, 1945.

MATERIALS AND METHODS

The Army requires that all pertinent clinical, therapeutic and laboratory data relative to each soldier infected with syphilis be entered by the medical officer in a special form called the "syphilis register." This register ordinarily accompanies the soldier in his travels and forms a permanent record of his case. When the prescribed follow-up examinations have been completed with satisfactory results (clinical normality, serologic negativity and normal findings in the cerebrospinal fluid), the register is officially closed and sent to the Office of the Surgeon General for survey and filing.

In the case of soldiers separated from the service because of demobilization or disability prior to the termination of the prescribed follow-up, the register is transmitted to the Surgeon General at once. However, immediately before separation the soldier is examined for evidence of relapse, and a serologic test for syphilis is performed. In the event that clinical evidence of relapse is found, the soldier is hospitalized for study and treatment and the appropriate entries are made in the syphilis register prior to its transmission.

Selection of Cases.—The histories in the 1,400 cases on which this study is based were collected in the Office of the Surgeon General between Nov. 1, 1945 and March 1, 1946. All syphilis registers arriving during this period were included in the series, provided that they met the following criteria:

1. The patient must have been separated from the service because of demobilization regulations or because of disability. It is believed that this provision reduced the factor of selection to a minimum, since no man was refused separation because of syphilis except in the presence of clinical relapse or late manifestations of the disease, and either of these events would merely delay the transmission of the register for several weeks to months.
2. The criteria for the diagnosis of primary or secondary syphilis must have been adequate.
3. The treatment must have been initiated before Feb. 1, 1945. This arbitrary date was chosen in order to obtain the longest follow-up period possible.
4. The initial treatment must have been by the prescribed method; that is, the intramuscular administration of 2,400,000 units of penicillin in seven and one-half days.

Material Studied.—Table 1 shows the distribution of the patients according to the stage of the disease and race. There were 600 (42.8 per cent) patients with the disease in the seronegative primary, 564 (40.3 per cent) with it in the seropositive primary and 236 (16.9 per cent) with it in the secondary stage. There were 790 (56.4 per cent) white and 610 (43.6 per cent) Negro patients. All were men between 18 and 38 years.

Treponema pallidum was demonstrated in the lesions in all the cases of seronegative primary syphilis, in 77 per cent of the cases of seropositive primary syphilis and in 41 per cent of the cases of secondary syphilis.

Read before the Section on Dermatology and Syphilology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

[1] Sternberg, T. H., and Leifer, W.: The Treatment of Early Syphilis by the Twenty-Six Weeks Mapharsen-Bismuth Schedule, Am. J. Syph., Gonor. & Ven. Dis., to be published.

[2] Mahoney, J. F.; Arnold, R. C., and Harris, A.: Penicillin Treatment of Early Syphilis, Am. J. Pub. Health **33**: 1387 (Dec.) 1943.

[3] Moore, J. E.; Mahoney, J. F.; Schwartz, W. H.; Sternberg, T. H., and Wood, W. B.: The Treatment of Early Syphilis with Penicillin, J. A. M. A. **126**: 67 (Sept. 9) 1944.

[4] Leifer, W.: The Treatment of Early Syphilis with Penicillin, J. A. M. A. **129**: 1247 (Dec. 29) 1945. Grauer, F. H.: Unpublished data.

[5] Management of Syphilis, U. S. War Department Technical Bulletin (TB Med. 106), Washington, D. C., Government Printing Office, Oct. 11, 1944.

The standard and quantitative Kahn tests were used for diagnostic and follow-up purposes throughout. All patients were hospitalized for at least the period of treatment.

The data have been compiled in tables 2 to 7 inclusive to show the total period of observation, the number of cases in which progress was satisfactory, the cases in which progress was considered unsatisfactory, the types of failures encountered and the results of examinations of cerebrospinal fluid. The follow-up period has been measured from the date that treatment was initiated. Approximately 84 per cent of the patients were observed for longer than nine months.

Table 1.—*Distribution of Patients According to Stage of Disease and Race*

	Number of Patients		Race			
			White		Negro	
Stage of Disease	No.	%	No.	%	No.	%
Seronegative primary	600	42.8	388	64.7	212	35.3
Seropositive primary	564	40.3	304	53.9	260	46.1
Secondary	236	16.9	98	41.5	138	58.5
Total	1,400	100.0	790	56.4	610	43.6

"Satisfactory progress" indicates that during the period of observation the patient showed no evidence of clinical relapse, that the serologic reaction for syphilis became negative or remained negative throughout and that, when examined, the cerebrospinal fluid was completely normal.

"Unsatisfactory progress" included all forms of infectious relapse, as well as possible reinfections, serologic relapse, abnormalities of the cerebrospinal fluid and doubtful or positive serologic reactions for syphilis at the last test, regardless of the length of observation.

REACTIONS

The material studied does not permit an accurate estimation of the frequency of the various reactions, since it is probable that many minor evidences of toxicity either were overlooked or were not entered in the registers. Urticaria and various other cutaneous eruptions presumably due to penicillin were not uncommon; febrile Herxheimer reactions were frequently noted. Of most importance in this respect is the fact that during the three month period when the case histories were being selected not a single serious reaction to penicillin was discovered, and in no instance was it necessary to discontinue treatment.

Table 2.—*Results of Treatment of Seronegative Primary Syphilis*

Period of Observation, Mo.	Number of Patients	Progress Satisfactory	Progress Unsatisfactory	
			Infectious Relapse	Serologic Relapse
Less than 3	11	3	6	2
3 to 6	24	17	6	1
6 to 9	48	38	7	3
9 to 12	323	316	7	0
Over 12	194	192	1	1
Total	600	566	27	7
			34	

RESULTS OF TREATMENT

Seronegative Primary Syphilis.—The results of treatment of seronegative primary syphilis are shown in table 2. Of the 600 patients in this group, 517, or 86 per cent, had been observed for more than nine months. Five hundred and sixty-six, or 94.3 per cent, were progressing satisfactorily at the time of the last observation. A total of 34 patients (5.7 per cent) were classed as progressing unsatisfactorily, and their results were considered failures, in 27 because of infectious relapse and in 7 because of serologic relapse. It is believed significant in respect to reinfection that of the 27 patients with conditions diagnosed "infectious relapse" 9 exhibited a solitary dark field–positive penile lesion associated with a negative serologic reaction. Of the nine lesions, two appeared in less than three months following treatment, two between three and six months, one between six and nine months, three between nine and twelve months and one after twelve months. Six of the 9 patients were Negroes. Thirteen additional patients among the 27 with "infectious relapse" had a monorecidive, but in them the serologic reaction was positive. Seven patients in this group were classified as having serologic relapse, because of a positive Kahn reaction at or prior to the time of the last observation. Two of these were observed for less than three months following treatment, 1 for between three and six months, 3 for between six and nine months and 1 for more than twelve months. It is of interest that of the 34 cases with results considered failures 32 were so classified before twelve months of observation had elapsed. The cerebrospinal fluid of 304 patients in this group was examined and it was entirely normal in all.

Table 3.—*Results of Treatment of Seropositive Primary Syphilis*

Period of Observation, Mo.	Number of Patients	Progress Satisfactory	Progress Unsatisfactory				
			Infectious Relapse	Serologic Relapse	Serum Fast		Abnormal Spinal Fluid
					Doubtful	Positive	
Less than 3	12	4	4	0	1	8	0
3 to 6	25	8	12	5	0	0	1*
6 to 9	65	49	4	5	0	6	1
9 to 12	283	274	0	3	3	8	0
Over 12	174	172	0	1	1	0	0
Total	564	507	20	14	5	17	2
			58*				

* One patient's results recorded twice to indicate the coincidental finding of infectious relapse and abnormal cerebrospinal fluid.

Seropositive Primary Syphilis.—In table 3 are shown the results of treatment of 564 patients with seropositive primary syphilis, of whom 462, or approximately 82 per cent, were followed for more than nine months. Five hundred and seven (89.9 per cent) were progressing satisfactorily at the time of their last observation. Fifty-seven patients (10.1 per cent) were placed in the "unsatisfactory progress" classification because of infectious relapse in 20, serologic relapse in 14, abnormal cerebrospinal fluid in 2 and serum fastness in 22. The results for 1 patient have been entered as failure twice, because of concomitant infectious relapse and abnormal cerebrospinal fluid. Among the 20 patients with infectious relapse there was only 1 with a solitary dark field–positive penile lesion associated with a negative serologic reaction, but there were 12 patients with positive serologic reactions in whom the recurrent infectious lesions were limited to the penis. It is noteworthy that of the thirty-four instances of infectious and serologic relapse all but one occurred before twelve months of follow-up had been obtained. Seventeen serum-fast patients had a positive serologic reaction and 5 a doubtful reaction at the time of the last examination. It is probable that with continued observation some of these reactions would have reversed to negative spontaneously. The cerebrospinal fluid of 287 patients was examined, and it was found normal in all but 2.

Secondary Syphilis.—In table 4 are shown the results of treatment of 236 patients with secondary syphilis, of whom 199, or approximately 84 per cent, were followed for more than nine months. One hundred and ninety-six (83.0 per cent) were making satisfactory progress and 40 (17.0 per cent) unsatisfactory progress at the time of the last observation. Unsatisfactory progress was manifested by infectious relapse in 4 patients, serologic relapse in 6, serum fastness in 27 and abnormal cerebrospinal fluid in 3. The small number of patients with infectious relapse, only 4 in this group, is of possible significance from an immunologic standpoint, although it may be accounted for by overlooked minor mucocutaneous lesions. All the ten instances of infectious and serologic relapse occurred before the twelfth post-treatment month. Of the 27 patients with serum fastness, 20 had a positive and 7 a doubtful serologic reaction at the time of the final examination. There were 3 patients with abnormal cerebrospinal fluids among the 128 that were examined.

Table 4.—*Results of Treatment of Secondary Syphilis*

Period of Observations, Mo.	Number of Patients	Progress Satisfactory	Progress Unsatisfactory: Infectious Relapse	Serologic Relapse	Serum Fast: Doubtful	Serum Fast: Positive	Abnormal Spinal Fluid
Less than 3	0	0	0	0	0	0	0
3 to 6	12	2	2	3	1	3	1
6 to 9	25	15	0	2	2	4	2
9 to 12	104	92	2	1	1	8	0
Over 12	95	87	0	0	3	5	0
Total	236	196	4	6	7	20	3
			40				

Table 5.—*Results of Examinations of Cerebrospinal Fluid*

Stage of Disease	Number of Patients	Fluids Examined	Normal Fluids	Abnormal Fluids, Groups: I	II	III
Seronegative primary.	600	304	304	0	0	0
Seropositive primary..	564	287	285	1	1	0
Secondary............	236	128	125	0	2	1
Total............	1,400	719	714	1	3	1
					5	

Effects of Treatment on the Cerebrospinal Fluid.—As shown in table 5, the cerebrospinal fluid was examined following treatment in 719 (51.3 per cent) of the 1,400 patients. In 79 the examination was performed between three and six months after treatment and in the rest, after six months or more. In only 5 (0.69 per cent) of the seven hundred and nineteen fluids was any abnormality noted, two of these occurring in cases of seropositive primary syphilis and three in cases of secondary syphilis. Moore's classification[6] of cerebrospinal fluid abnormalities was used, one was in group I, three were in group II and one was in group III. In one instance, shown in table 3, a patient had an infectious relapse and an abnormal cerebrospinal fluid concomitantly. No instance of symptomatic neurosyphilis was recorded in this series.

Summation of Treatment Results.—Table 6 shows that of the 1,400 patients on whom this study was based 1,269, or 90.6 per cent, were progressing satisfactorily and 131 (9.4 per cent) unsatisfactorily at the time the final observations were made. The variation in response of the three phases of early syphilis is clearcut. Thus for the period of follow-up available in this study, satisfactory progress was indicated in 94.3 per cent of the group with seronegative primary syphilis, in 89.9 per cent of the group with seropositive primary syphilis and in 83.0 per cent of the group with secondary syphilis. In this series, in 83 per cent of the patients the disease was diagnosed and treated in the primary stage, a percentage consistent with previous reports on Army material.[7] The over-all favorable results of 90.6 per cent are, therefore, to a large extent dependent on this ratio, which is at variance with the usual findings in civilian clinics, in which a considerably higher incidence of late secondary syphilis is encountered.

Table 6.—*Progress of Entire Series of 1,400 Patients, Regardless of Period of Follow-up*

Stage of Disease	Number of Patients	Progress Satisfactory: No.	%	Progress Unsatisfactory: No.	%
Seronegative primary..	600	566	94.3	34	5.7
Seropositive primary...	564	507	89.9	57	10.1
Secondary.............	236	196	83.0	40	17.0
Total.............	1,400	1,269	90.6	131	9.4

COMMENT

It must be emphasized that the results presented in this paper are to be regarded as tentative and not representative of the final percentage of "cure." The period of observation, even for the patients followed for over a year, is still inadequate. Nevertheless, and despite the known exquisite chronicity of syphilis, we venture the opinion that the ultimate results with this therapeutic schedule will not be at great variance with those reported here. With longer observation, some of the conditions now classified as progressing satisfactorily would undoubtedly eventuate in failure. It is not believed that the number of such additional failures would be large, since only three of the seventy-eight instances of clinical and serologic relapse occurred after

Table 7.—*Classification of Treatment Failures According to Stage of Disease, Race and Type of Failure*

Stage of Disease	Race	Number of Patients	Monorecidive	Relapse: Mucocutaneous	Relapse: Serologic	Serum Fast	Abnormal Spinal Fluid	Total
Seronegative primary	White	388	7	2	1	0	0	10
	Negro	212	15	3	6	0	0	24
Seropositive primary	White	304	4	3	2	10	2	21
	Negro	260	9	4	12	12	0	37
Secondary	White	98	0	1	2	4	2	9
	Negro	138	2	1	4	23	1	31
Total.....	White	790	11	6	5	14	4	40
	Negro	610	26	8	22	35	1	92

---

[6] Moore, J. E.: The Modern Treatment of Syphilis, ed. 2, Springfield, Ill., Charles C Thomas, Publisher, 1941, p. 346.

[7] Sternberg and Leifer.[1] Wise, C. R., and Pillsbury, D. M.: Penicillin in the Treatment of Syphilis, Proc. Roy. Soc. Med. **37**: 491 (July) 1944. Pillsbury, D. M.: Penicillin Therapy in Early Syphilis, Brit. J. Ven. Dis. **21**: 139 (Dec.) 1945.

a year or more of observation, the majority becoming evident between the third and the ninth post-treatment month. On the other hand, some of the 49 patients classed as serum fast might well progress spontaneously to seronegativity and would then be included in the satisfactory group.

In view of the recent revelations concerning the changed nature of commercial penicillins,[8] any analysis of their therapeutic effectiveness must take this factor into account. It has been shown that commercial penicillins contain varying proportions of one or more of four chemically distinct but closely related crystalline species, termed G, F, X and K. Apparently the earlier penicillins contained chiefly G or F and little X or K. With a change in the producing organism and in the method of manufacture, larger amounts of K appeared, at the expense primarily of G. In animal syphilis, K appears to be relatively ineffective as compared with G, F and X. This is attributed to the rapid destruction of K in the body, probably by serum. As far as can be learned, the change in commercial penicillins came about in 1945. Since all the patients in our series were treated prior to Feb. 1, 1945, presumably with penicillins of good potency, the results may be much superior to those obtained today with an identical schedule of treatment.

It is more difficult to understand why certain persons in the same stage of syphilis respond favorably to a given dose of drug while others do not. This may be due to the drug itself, which may be deteriorated or of low potency; to some unknown difference in the immune responses of the patient, resulting in an inability to utilize the drug properly or to muster satisfactory defenses of the tissue, or finally, to a difference in virulence or drug susceptibility of the infecting organism. There is evidence, as already presented, to show that commercial penicillins have not always been of the same character or potency and, in fact, that they may vary in these respects from day to day in the hands of the same producer. However, this explanation cannot account for all failures, for even with the best of the arsenical-bismuth schedules a certain percentage of infected persons failed to respond, and it must be anticipated that there will be a similar group of failures even with the best penicillins or with penicillin-arsenic-bismuth combinations. It must therefore be assumed that subtle differences in the biologic interrelationship of the human being and the micro-organism lie at the root of an appreciable percentage of failures in treatment. These differences appear to be quantitative rather than qualitative, since most patients who relapse after a given course of treatment respond subsequently to an intensified and more prolonged therapeutic regimen. And, conversely, almost all patients can be made to fail when given a grossly inadequate amount of drug.[5]

In table 7 are presented in detail the failures observed in the present series. Most striking are the differences in rates of failure between the races in all three phases of early syphilis. There were 40 (5 per cent) patients with failures among the 790 white patients, as contrasted with 92 (15 per cent) among the 610 Negro patients. We hesitate to ascribe this disparity in results to a dissimilarity in host-parasite relationship between the races. Furthermore, other studies of similar material do not support such a concept. On the other hand, it may be attributed to a higher incidence of reinfection among Negroes, as suggested by the occurrence of twenty-six (4.2 per cent) instances of monorecidive in them as compared with eleven (1.4 per cent) instances in white patients. However, if reinfection is to serve as an explanation for the considerably higher incidence of serologic relapse and serum fastness in the Negro group, it must be assumed that many of these patients either concealed or did not report the early lesions or that the lesions were overlooked by the medical officer or that lesions failed to develop early in the course of their reinfection. If it is conceded that reinfection is possible—and most syphilologists do concede this—it should be expected to occur with greater frequency in a group such as this, in which 83 per cent of the patients were treated intensively in the primary stage of the disease with a short schedule and without benefit *of the prophylactic effects of a bismuth preparation.* It is of interest and possible significance in this connection that the incidence of "infectious relapse" in this series was 4.5 per cent in seronegative primary and 3.5 per cent in seropositive primary syphilis, as contrasted with 1.7 per cent in secondary syphilis. Moreover, reinfection should be expected to occur with much greater frequency in the Negro group, since the syphilis rate of Negro troops has been consistently twelve to fifteen times that of white troops. Since the alternative to this hypothesis must involve a presumed racial difference in the mechanisms of biologic response to the disease, of which there is no proof at the moment, it would seem to us that reinfection in intensively treated patients with primary syphilis is a much more important factor in evaluating therapeutic results than has been generally conceded.[9] The burden of distinction between monorecidive and reinfection might well be shifted to those who contend that a lesion is a monorecidive mainly because the circumstances of the case do not happen to fit the almost impossible criteria for reinfection.[10]

SUMMARY

1. An analysis was made of the Army records of 1,400 men with early syphilis treated with 2,400,000 units of penicillin in aqueous solution or isotonic solution of sodium chloride prior to Feb. 1, 1945.

2. There were no severe toxic reactions, and all patients completed the prescribed schedule of treatment.

3. Approximately 84 per cent of the patients were observed for over nine months following treatment.

4. Satisfactory progress was obtained in 94.3 per cent of 600 cases of seronegative primary syphilis, in 89.9 per cent of 564 cases of seropositive primary syphilis and in 83.0 per cent of 236 cases of secondary syphilis.

5. The cerebrospinal fluid was examined following treatment in 719 patients: it was normal in 714 and abnormal in 5 (0.69 per cent).

6. The high over-all satisfactory progress rate of 90.6 per cent, admittedly tentative because of inadequate

---

[8] Official Statement on Penicillin in Syphilis, J. A. M. A. **131:** 34 (May 4) 1946. Eagle, H., and Musselman, A.: The Low Therapeutic Activity of Penicillin K Relative to That of Penicillins F, G, and X, and Its Pharmacological Basis, Science **103:** 618 (May 17) 1946.

[9] Schoch, A. G., and Alexander, L. J.: Reinfection in Syphilis, Am. J. Syph., Gonor. & Ven. Dis. **27:** 15 (Jan.) 1943. Beerman, H.: The Problem of Reinoculation of Human Beings with Spirochaeta Pallida, ibid. **30:** 173 (March) 1946.

[10] Stokes, J. H.; Beerman, H., and Ingraham, N. R., Jr.: Modern Clinical Syphilology, ed. 3, Philadelphia, W. B. Saunders Company, 1944, pp. 186 188 and 645-647.

follow-up, was attributed to the considerable proportion of cases of the disease in the primary stage (83.1 per cent) and to the fact that the patients were probably treated with penicillins of satisfactory potency.

7. The rate of failure was approximately 5 per cent in the 790 white patients and 15 per cent in the 610 Negro patients, and the implications of this disparity in respect to reinfection were discussed.

ABSTRACT OF DISCUSSION

Dr. Grant Morrow, San Francisco: Dr. Sternberg has shown that penicillin is as active a spirocheticide as arsenic compounds or bismuth preparations. The results are equal to or better than those obtained with the five day drip, the eight day drip or the Eagle method. The toxic reactions to penicillin are negligible when compared with 1 death for each 500 patients treated with the five or eight day method and about 1 in each 2,000 treated by the Eagle regimen. There is no discrepancy between the white and the Negro race. There is a higher incidence of reinfection in the Negro race. Dr. Sternberg has presented 9 cases of relapse in the seronegative primary group and 1 case in the seropositive group. All the patients in these cases had solitary dark field-positive lesions and were seronegative. It is impossible for their conditions to be relapses. They are definite reinfections. When relapse follows rapid treatment, the serologic reaction drops in titer, though rarely to negativity, and then rises during the next four to eight weeks, when lesions appear. When this happens the lesions are usually multiple papules. If there is a dark field-positive lesion and the serologic reaction is negative, the condition is one of reinfection, not of relapse.

At the University Hospital in Ann Arbor, Mich., there was a man with a primary dark field-positive chancre. In his wife, results of physical and serologic examination were negative. The man received rapid treatment. They returned in two months. Results of his physical and serologic examination were negative. The wife had a dark field-positive chancre. She received rapid treatment. Again in two months they returned, and the husband had a new dark field-positive chancre in a different location. The wife had a negative reaction. Both patients were then retreated, although there was evidence of syphilis in the husband only. The results of clinical and serologic examination of each have remained negative more than a year. The United States Public Health Service has had many such experiences and has aptly termed this "ping-pong syphilis."

Dr. Charles R. Rein, New York: Dr. Sternberg has asked me to discuss our experiences with the serologic follow-up of patients with penicillin-treated syphilis. In the Division of Serology at the Army Medical Center, we had the opportunity of performing a battery of serologic tests with serums of such patients at weekly and monthly intervals. It was possible to distinguish between relapse and reinfection by carefully conducted serologic studies. Following penicillin therapy in patients with early syphilis, there was usually a progressive reduction in serologic titer. In reinfection the patient attained and maintained complete seronegativity followed by the development of a dark field-positive seronegative lesion at a new site. Shortly afterward in such patients there developed seropositive reactions with rapidly increasing titers. In treatment failures or relapse there was noted a sudden increase in serologic titer, followed in about one month by clinical evidence of a mucocutaneous relapse. If penicillin-treated patients are subjected to serologic examinations at weekly or monthly intervals, it is possible to predict a clinical relapse about one month before there is any clinical evidence by the increase in serologic reaction following seronegativity. It is of utmost importance, therefore, to educate these patients to the importance of reporting to the physician at monthly intervals for at least one year following the completion of penicillin therapy for serologic and clinical examinations.

PENICILLIN IN THE TREATMENT OF NEUROSYPHILIS

A Study of One Hundred Cases Followed Twelve Months or More

AUGUSTUS S. ROSE, M.D.
and
HARRY C. SOLOMON, M.D.
Boston

During the twenty-six months between Feb. 1, 1944, and April 1, 1946, 236 patients with neurosyphilis were treated with penicillin at the Boston Psychopathic Hospital. Of these, 12 patients have died, follow-up of 14 patients has been lost from the clinic and 210 are now under follow-up. This report is concerned chiefly with the first 100 of the cases which have been followed one year or more after treatment. A large percentage of patients were psychotic and were regularly committed as insane. Many had been patients in other state mental hospitals and were transferred to the Boston Psychopathic Hospital for the investigative therapy. After treatment, patients were discharged to the community if clinical improvement permitted and were seen in the outpatient department for periodic examination. Otherwise, they were transferred to the Metropolitan State Hospital in Waltham, Mass., where follow-up examinations could be made by those of us who administered the therapy. If retreatment became necessary, patients were readmitted or retransferred to the Boston Psychopathic Hospital. Patients who had previously received fever therapy within one year and patients with conditions which were in a developing remission from previous therapy were excluded.

Table 1.—*The Results of Combined Penicillin-Fever Therapy in Neurosyphilis*

Diagnosis	Total Patients	Patients Improved, No.	Patients with No Change, No.	Patients Worse, No.	Patients Retreated, No.
Dementia paralytica......	75	52 (69%)	21	2	29 (38%)
Tabes dorsalis............	10	7	3	0	1
Meningovascular disease..	10	2	8	0	2
Optic atrophy............	5	1	3	1	4
Total..................	100	62	35	3	36

METHODS OF TREATMENT

As fever therapy is known to be effective in late neurosyphilis and as the value of penicillin was undetermined, at the beginning of our investigations it seemed safer for the patient to combine the two methods. Therefore, a program of administering malaria or fever in a fever cabinet in amounts equivalent to approximately one half of the generally accepted course of fever was instituted and is still being carried out in the majority of cases. This consists of four to six paroxysms of malarial fever with temperatures above 104 F. or a total of twenty hours of temperature above 105 F. in the fever cabinet. Penicillin was given concurrently or in succession with the "one-half course" of fever therapy. In a few cases (19) penicillin was given

---

From the Boston Psychopathic Hospital.

Read before the Section on Dermatology and Syphilology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

The penicillin was provided by the Office of Scientific Research and Development from supplies assigned by the Committee on Medical Research for clinical investigations recommended by the Committee on Chemotherapeutics and Other Agents of the National Research Council.

without fever therapy. No other form of antisyphilitic treatment was administered. If the patient's condition indicated the need for more treatment, penicillin was repeated in the same amount and frequency as the first course. Fever therapy was not repeated.

No rigid criteria were laid down for the second or third course of penicillin, since an effort was made to study each individual case and determine its need from time to time. However, patients who showed either clinical or spinal fluid relapse were retreated. Also, patients who failed to show improvement in clinical condition and spinal fluid at the end of two months were given additional treatment with penicillin. If cell count and total protein contents of the spinal fluid remained at abnormal levels at six months, a repeat course of penicillin was given, regardless of clinical status.

Table 2.—*Comparison of Results by Different Methods of Treatment*

Methods of Treatment	Total Patients	Patients Improved		Patients with No Change, No.	Patients Worse, No.	Patients Retreated	
		No.	%			No.	%
Penicillin plus malaria...	60	40	66	20	0	20	33
Penicillin plus fever cabinet....................	21	11	52	8	2	5	
Penicillin alone..........	19	11	58	7	1	11	58
Total................	100	62		35	3	36	

A total of 3,000,000 units of penicillin, given intramuscularly, was used arbitrarily as a course of treatment. The time interval of injection and number of units per injection were varied according to a plan designed to give data for comparison. All the patients in the 100 cases herein reported received 3,000,000 units of penicillin as a course.

DIAGNOSTIC CLASSIFICATION

For purposes of simplification, all patients with definite symptoms of mental disorder are included under the diagnosis of dementia paralytica. Many of these patients showed neurologic signs of tabes dorsalis, and several had primary optic atrophy. The patients classified as having tabes dorsalis and optic atrophy had symptoms and signs of those disorders without psychiatric symptoms. Under the diagnosis of meningovascular neurosyphilis are the patients with pupillary abnormalities yet without symptoms and patients who gave evidence of recent or remote cerebral vascular occlusion.

Table 3.—*Comparison of Results by Different Schedules of Penicillin*

Penicillin Regimen	Total Patients	Patients Improved, No.	Patients with No Change, No.	Patients Worse, No.	Patients Retreated	
					No.	%
50,000 units every 4 hr. for 10 days....................	46	25	18	3	16	35
50,000 units every 2 hr. for 5 days....................	27	18	9	0	11	40
50,000 units every 3 hr. for 7½ days..................	17	12	5	0	6	35
25,000 units every 3 hr. for 15 days....................	10	7	3	0	3	30
Total....................	100	62	35	3	36	

CLINICAL RESULTS

The evaluation of clinical results of treatment in a disease so complex as late symptomatic neurosyphilis is extremely difficult. Psychiatric symptoms may be affected, as in the nonsyphilitic patient, by changes in the environment, by alterations in the general physical status or by the administration of active treatment. Furthermore, patients may show improvement in some symptoms and progression in others. New symptoms such as convulsions may appear while all other symptoms improve. To obviate as many of these difficulties as possible, we present the clinical results only in cases followed at least one year, and we classify the status of the patients as "improved," "no change" and "worse." These categories represent the over-all clinical picture of the patient on or about April 1, 1946, as compared with the total picture before treatment. Table 1 shows the clinical results of the 100 patients divided on basis of diagnosis. Emphasis is placed on the column "Patients Retreated." We interpret this to be a rough estimate of the adequacy of the treatment as judged by clinical and laboratory data during the period of follow-up.

Table 4.—*Comparison of Results by Different Methods of Treatment of 75 Patients with Dementia Paralytica*

Methods of Treatment	Total Patients	Patients Improved		Patients with No Change, No.	Patients Worse, No.	Patients Retreated	
		No.	%			No.	%
Penicillin plus malaria...	52	37	71	15	0	17	34
Penicillin plus fever cabinet....................	11	7	63	3	1	3	27
Penicillin alone..........	12	8	66	3	1	9	75
Total................	75	52	69	21	2	29	38

Table 5.—*Changes in Spinal Fluid One Year After Penicillin-Fever Treatment*

	Before Treatment		After Treatment *	
	Patients Normal, No.	Patients Abnormal, No.	Patients Normal, No.	Patients Abnormal, No.
Cells....................	38	62	79	16
Total protein content.	28	72	77	18
Wassermann Titration	**Patients with Positive Reactions, No.**		**Patients with Positive Reactions, No.**	
0.1 cc....................	61		11	
0.2 cc....................	19		35	
0.4 cc....................	11		17	
0.6 cc....................	8		13	
0.8 cc....................	1		5	
1.0 cc....................	0		3	
Negative..............	0		11	

* Spinal fluid examination was not done on 5 of the 100 patients at one year or after.

It is evident from table 1 that the number of patients is too small to permit comparison of results between the diagnostic groups. Nevertheless, it is clear that 69 per cent improvement in the cases of dementia paralytica and 62 per cent improvement in the whole group points to results which compare favorably with older methods of treatment. Thirty-six of the 100 patients required retreatment with penicillin.

Attention is drawn to the cases of optic atrophy. Although 4 of the 5 patients required retreatment, only 1 showed progression of visual loss and 1 patient showed improvement. In the latter patient there was improvement in visual acuity and also a widening of the peripheral fields.

Comparison of results by the three different methods of treatment, as shown in table 2, is subject to confirmation because of the unequal number of cases. Of the 60 patients treated with penicillin combined with malaria, 40 (66 per cent) are improved, 20 have shown no change and 20 (33 per cent) required retreatment. The group treated with penicillin combined with fever in a fever cabinet and those treated with penicillin alone showed a somewhat smaller percentage of improved conditions.

The results obtained by the four different schedules of administration of penicillin are compared in table 3. Again, the unequal number of patients in each group does not permit definite conclusions. However, the trend shown by the percentage of patients requiring retreatment is probably significant, for comparable figures are obtained in our entire series of 210 cases. That is, patients given penicillin over a period of fifteen days require retreatment in fewer instances than those receiving penicillin in five days.

It is of interest to segregate the 75 cases of dementia paralytica for analysis of results (table 4). Fifty-two patients (69 per cent) are improved, 21 have shown no change and 2 are worse. Twenty-nine patients (38 per cent) required retreatment with penicillin. Forty-nine of the improved patients have returned to the community and have regained approximately their prepsychotic socioeconomic status. Although these results may be considered good, 38 per cent requiring retreatment points out that the original treatment was not sufficient.

Twelve of the patients with dementia paralytica were treated with penicillin alone. Of these, 8 are improved, 3 have shown no change and 1 is worse. The last patient and 1 of the 3 showing no change as of April 1, 1946 have since been given fever therapy. Nine (75 per cent) of the 12 patients required retreatment with penicillin. The small number of patients in this group makes it impossible to draw any conclusion other than that 3,000,000 units of penicillin is insufficient treatment for dementia paralytica.

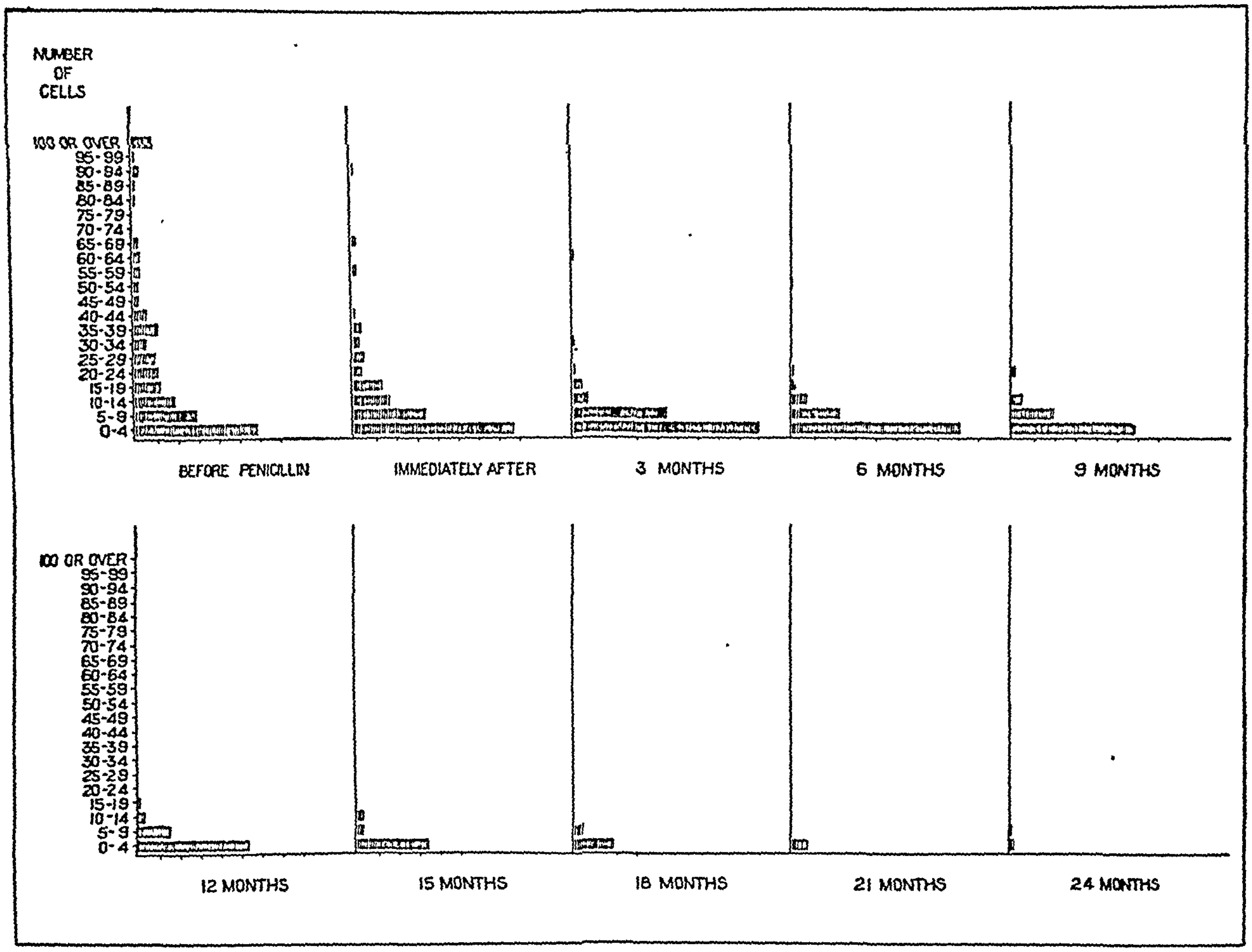


Chart 1.—Follow-up on the white cell count in the spinal fluid after patients were treated with penicillin. (One mark indicates 1 case.)

RESULTS OF EXAMINATION OF SPINAL FLUID

Spinal fluid was obtained in each case before treatment, immediately after treatment and at intervals of at least every three months thereafter. On each specimen the cell count and total protein content were determined by the hospital laboratory. The Wassermann Laboratory of the Department of Public Health of the Commonwealth of Massachusetts performed the titrated Kolmer-Wassermann reaction on each specimen. The Wassermann reaction is carried out in six dilutions of spinal fluid as follows: 0.1 cc., 0.2 cc., 0.4 cc., 0.6 cc., 0.8 cc. and 1.0 cc.

Charts 1, 2 and 3 portray the determinations of cell count, total protein content and Wassermann reaction respectively on all patients treated with penicillin from whom spinal fluid was obtained three months or more after treatment. In each figure one mark represents 1 case. In chart 3 each mark is recorded on the basis of the weakest dilution of spinal fluid in which the Wassermann reaction was found positive. It is observed that the number of cases followed decreases with each quarterly period of follow-up. In spite of this decrement, a number of changes in the direction toward normal in the abnormalities of the spinal fluid are observable.

Before treatment the cell count (chart 1) and total protein content (chart 2) are above normal in a large number of cases.[1] The relative number of patients showing normal determinations increases in each of the follow-up periods. The cell count is seen to return to normal somewhat earlier than does the total protein content. A decrease in the intensity of the Wassermann titration (chart 3) occurs, but this change is less rapid than those of cell count and total protein content. The number showing a negative Wassermann reaction at any period of follow-up is few. In spite of these trends toward normal, it is evident that there are some cases in the latter periods of observation which will still show strong abnormalities of the spinal fluid.

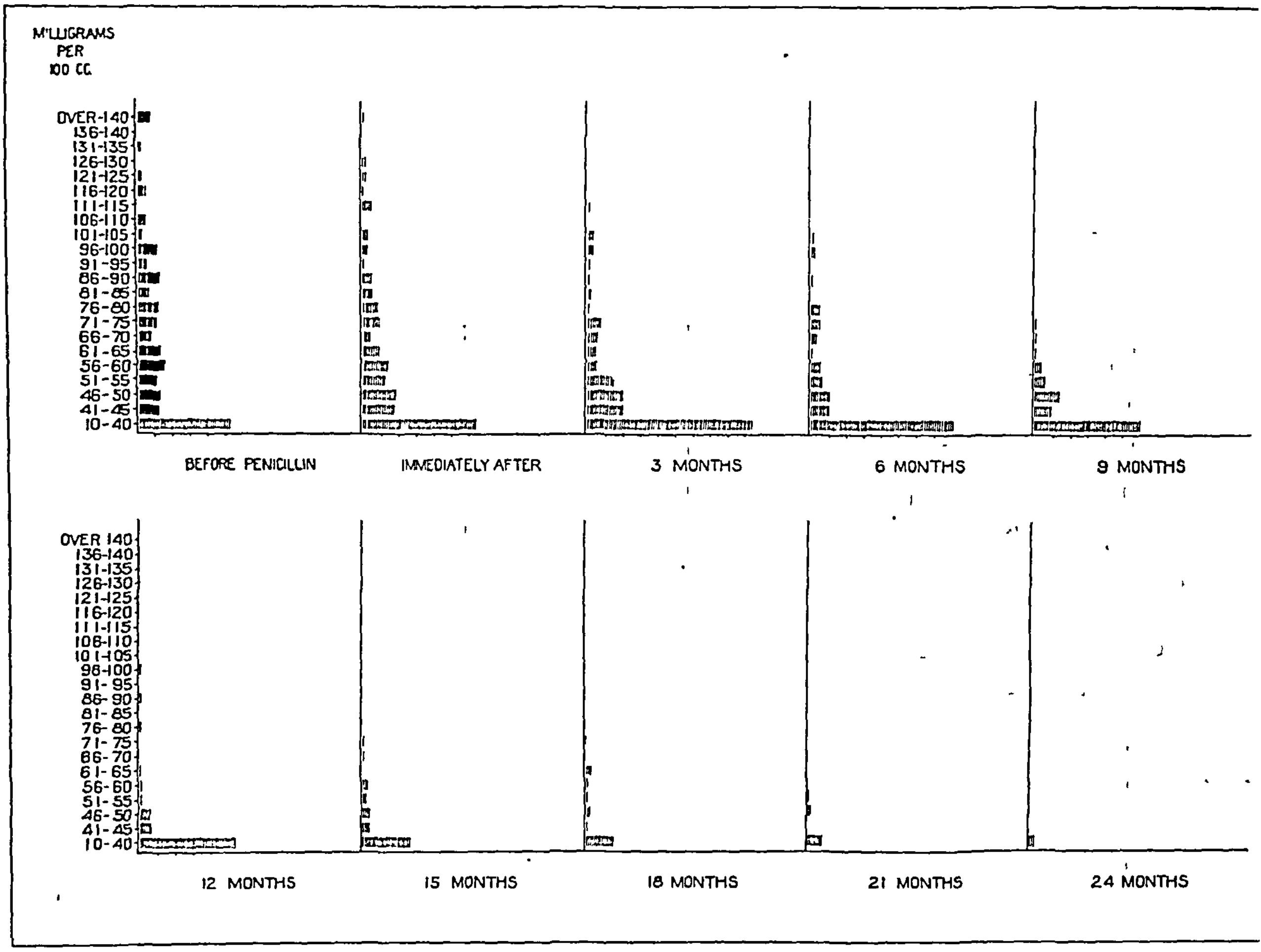


Chart 2.—Follow up on the total protein content of the spinal fluid after patients were treated with penicillin (One mark indicates 1 case.)

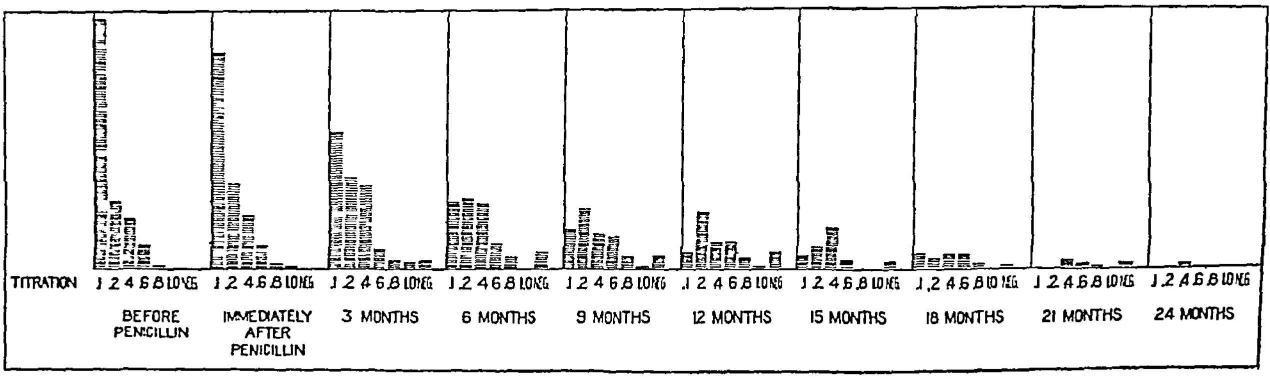


Chart 3.—Titrated Wassermann (Kolmer) reaction of the spinal fluid after patients were treated with penicillin (One mark indicates 1 case.)

The changes in the spinal fluid shown by the large group of cases are also to be found in the 100 cases followed one year or more (table 5). The majority of the patients have normal cell counts and total protein contents after treatment, and the shift in Wassermann reaction toward a weaker titration is definite. Eleven patients at one year or more after treatment have negative Wassermann reactions.

---

[1] The rather large number of patients showing normal cells and total protein content before treatment is explained by the fact that many of these patients had received chemotherapy previously in other hospitals.

Because the majority of patients in this study received a short course of fever therapy as well as penicillin, the question is raised as to whether the changes observed are due to fever therapy. A survey of results of examination of spinal fluid in the 19 patients treated with penicillin alone reveals similar and comparable changes to the larger group, although the shift in the titration of Wassermann reactions was less striking. This, together with published data from other clinics, demonstrates that penicillin alone will effect a change in the spinal fluid. Since the amount of fever therapy administered to these patients is considerably below that which experience has proved necessary for the best treatment of this disease, we believe that the results to be obtained at the end of several years will give evidence of the usefulness of penicillin.

DEATHS

Of the 12 deaths which have occurred in the 236 patients treated during the twenty-six months, 6 are accredited to dementia paralytica, 3 to accidental causes, 1 to sudden cardiac failure, 1 to bronchopneumonia and 1 to ruptured peptic ulcer. In 1 patient dying of dementia paralytica it was felt that penicillin given during an acute, extremely overactive psychosis may have contributed to the death. At least no quieting effect was obtained, and it is possible that penicillin intensified the symptoms. In no other case did it appear that treatment contributed to the fatal outcome.

COMMENT

Although past experience had demonstrated the many difficulties in evaluation of new treatments of late symptomatic neurosyphilis, nonetheless the advent of penicillin into the treatment of neurosyphilis was greeted with great optimism. The relatively short space of time required for its administration, its safety and the fact that it can be given during the course of therapeutic malaria were considered great advantages. Furthermore, our program of a short course of fever therapy had the advantage of reducing the complications and decreasing the natural discomforts of the patient of longer courses of fever. After two years' experience with penicillin our enthusiasm has been tempered, and we have become aware of the limitations of this treatment as well as the advantages. During the early months of our studies in 1944 we were impressed with the therapeutic potency of penicillin as shown by the relative frequency of an immediate reaction of intensification of symptoms followed by the subsidence of tremors, dysarthria and, in some instances, memory defects. At that time we were concerned lest in giving 3,000,000 units we were giving an unduly large quantity of the drug. But as patients were followed and more and more cases of varying types were added to the series, doubts about the significance of our early observations began to creep in. Early in 1945 the arbitrarily selected course of 3,000,000 units of penicillin was increased to 6,000,000 units. It had by then become evident that the need for retreatment was too frequent to consider the treatment as satisfactory, and we did not wish to complicate the investigation by increasing the amount of fever. It is possible that some of these clinical observations may be attributed to the changing qualities of commercial penicillin, as recently pointed out in The Journal. However, it is also possible that the processes of recovery following a short course of fever therapy and penicillin are less adequate than those which accompanied the older methods of treatment. But, in spite of a reduced enthusiasm engendered by experience, the results obtained are creditable and, at least by the methods of evaluation used, are comparable to older methods of treatment. If these results withstand the test of time, considerable progress will have been made in the treatment of late neurosyphilis.

SUMMARY AND CONCLUSION

1. Two hundred and thirty-six patients with neurosyphilis were treated with penicillin between Feb. 1, 1944 and April 1, 1946. Of these, 210 are now being followed. The clinical results in the first 100 cases followed one year or more are presented. The results of examination of the spinal fluid of all patients on whom an examination was obtained at least three months after treatment, as well as the 100 cases followed a year, are tabulated.

2. The majority of patients were given a short course of fever therapy in combination with penicillin. No other antisyphilitic treatment was given. If more treatment was needed, administration of penicillin was repeated.

3. Each patient was given 3,000,000 units of penicillin intramuscularly as a course of treatment. Intervals of injection and the number of units per injection were varied according to plan.

4. Clinical results of the 100 patients followed one year or more show 62 improved, 35 with no change and 3 worse. Thirty-eight patients were retreated with penicillin.

5. Following treatment the cell count and total protein contents of the spinal fluid return toward normal in from three to six months and six to nine months respectively. The strength of the Wassermann titer decreases more slowly. Of the 100 patients followed a year or more, 11 have a negative Wassermann reaction.

6. The need for retreatment in a little more than one third of the cases followed one year or more indicates that 3,000,000 units of penicillin combined with a short course of fever therapy is not optimum treatment for late symptomatic neurosyphilis.

ABSTRACT OF DISCUSSION

Dr. Paul A. O'Leary, Rochester, Minn.: An interesting feature of penicillin therapy and neurosyphilis is the low incidence of asymptomatic neurosyphilis noted in the patients with early syphilis treated with penicillin. Including all patients with early syphilis, even those who have had their disease for two years, the incidence of asymptomatic neurosyphilis is approximating only 2 per cent. After World War I certain German physicians expressed the belief that arsphenamine per se was a prominent factor in increasing the incidence of neurosyphilis. The fact that asymptomatic neurosyphilis has been found in about 15 per cent of the patients treated with arsenic and is now observed in only 2 or 3 per cent of those treated adequately with penicillin is of more than passing interest. Two years ago my experience with penicillin given alone led me to believe that it was ineffective in the treatment of patients with neurosyphilis. I then started amplifying their treatment course by combining penicillin and fever therapy. By so doing the results of fever therapy have been improved by about 5 to 10 per cent. In other words, the combination of malaria therapy and penicillin given concurrently is superior to either malaria or penicillin therapy when employed individually. The improvement in the serologic reactions of the spinal fluid of patients with neurosyphilis is the outstanding benefit that follows penicillin therapy. Thus far the number of patients in whom the spinal fluid reactions have been improved is much greater than are those in whom all the factors in the spinal fluid tests have been reversed to normal. From the clinical standpoint the good effects following penicillin therapy in patients with symptomatic neurosyphilis may be classified as "tonic." I have never seen a clearcut clinical remission develop in a patient with frank dementia paralytica of any type from penicillin alone, and the partial remissions that occur not only are incomplete but are of short duration. However, penicillin plus fever therapy produces complete remissions. The "tonic" effects, such as gain in weight and improvement in the somatic complaints that occur following penicillin therapy in neurosyphilitic patients, seem to be the outstanding effects. I have noted improvement in the lightning pains of patients with tabes dorsalis. Irrespective of whether the tabetic patient is serologically negative or positive, some decrease in frequency of the pains as well as in their severity has been noted in about 25 per cent of the cases. The future of penicillin-malaria therapy in patients with tabetic optic atrophy offers slight promise. The combination of fever and penicillin is offering at the moment a little encouragement in that more cases are now encountered in which the progressive loss of vision is stopped. The results are erratic following use of penicillin in the treatment of meningovascular neurosyphilis. In occasional cases the serologic reversals to negative are striking, but such results are so irregular and unpredictable that I do not believe that they warrant the use of penicillin alone in such cases. In my experience the results from the use of penicillin given intravenously have been better than when it is administered intramuscularly; however, the technical difficulties, such as the inconvenience and phlebitis, are too great to make its use practical.

Dr. Norman N. Epstein, San Francisco: I appreciate the difficulty of presenting therapeutic results in this manifestation of syphilis. It is hard to describe on the blackboard or on paper the clinical condition of the patients with this condition. It also must be appreciated that it is difficult to evaluate this new remedy penicillin. At present there is no unanimity of opinion as to its value therapeutically, how it should be administered or what the dose should be. Therefore, those who have attempted to treat neurosyphilis with penicillin have had to guess at the optimum therapeutic regimen. My colleagues and I began to treat neurosyphilis with penicillin in March 1945. Since then we have treated 58 patients with neurosyphilis of various types. The plan consisted in the administration of 40,000 units of sodium penicillin intramuscularly every three hours for fourteen days, a total of 4,500,000 to 5,000,000 units being given. Fever therapy was combined with the penicillin therapy. The patient received artificial fever every three or four days during the course of penicillin therapy. Fever was produced by the blanket method. The temperature was elevated to 104 or 105 F. and maintained for five hours at each session. The patient received a total of ten such episodes. When he left the hospital, he was given it weekly, so that he had a total of fifty hours of fever and 4,500,000 to 5,000,000 units of penicillin. These patients have been observed only a short time, a few only as long as eleven months. Sixteen have had their spinal fluids rechecked more than once. Therefore, any conclusions are simply impressions. The patients who had symptoms of meningovascular syphilis, such as transient paralyses, severe headache or eye symptoms such as diplopia, improved remarkably. Those with acute mental disturbances of dementia paralytica, such as disorientation, confusion and excitement, did well also. I think that they did better with penicillin and fever than with fever alone. The patient with the tabetic form of dementia paralytica did no better than when fever only was given. The effects of penicillin and fever therapy on the spinal fluid findings impressed us. Sixteen patients had rechecks of their spinal fluid; in 8 of these the formula of the spinal fluid changed from that of group 3 to minimal changes, i. e., group 1. Protein content, colloidal gold curve and the Wassermann reaction decreased decidedly in character. It was astonishing to see a colloidal gold curve of 5554320000 flatten out to negative in a short period. In the cases in which we have had the opportunity to check several months later such improvement was sustained.

Dr. Louis A. Brunsting, Rochester, Minn: I am sure the essayists will agree that the treatment of syphilis with penicillin is still in the experimental stage and that it will take years to make a proper appraisal; it seems that penicillin alone is not adequate, especially in neurosyphilis. In combining penicillin with forms of fever therapy, it has been my experience that a course of penicillin treatment is useful as an introductory phase of treatment for patients who have a pronounced degree of meningovascular involvement or an agitated stage of paresis. Frequently a course of penicillin will reduce the fulminating process so that fever treatment can be given with less risk of upsetting the balance. A small group of patients have been given penicillin intramuscularly in combination with peanut oil and beeswax, and the results have been equal to those in cases in which penicillin has been given round the clock every three hours in aqueous solution, and by this method some of the hospital expense can be spared.

Dr. Augustus S. Rose, Boston: I am glad that those who discussed the paper brought out the fact that we are not really recommending for general use the schedule of treatment which we have here presented. We have tried only to *evaluate the system of therapy as described and present our* data in as unbiased a way as is possible. It would appear that the treatment which we have administered to these patients, namely, 3,000,000 units, plus what we have termed one-half course of fever therapy, is not sufficent for dementia paralytica.

EARLY CONGENITAL SYPHILIS

Treatment of Two Hundred and Fifty-Two Patients with Penicillin

R. V. PLATOU, M.D.
ALLAN J. HILL, Jr., M.D.
New Orleans
NORMAN R. INGRAHAM, M.D.
Philadelphia
MARY S. GOODWIN, M.D.
Baltimore
ERLE E. WILKINSON, M.D.
ARILD E. HANSEN, M.D.
Galveston, Texas
and
ALBERT HEYMAN, M.D.
Atlanta, Ga.

The avowed purposes of this study were to evaluate the effects of sodium penicillin in the treatment of early congenital syphilis, to find the best means for using this drug alone and to discover criteria by which results might be predicted. Observations incident to treatment of 252 infants in five cooperating university clinics have furnished a wealth of information toward these ends. The recent joint statement issued by the Committee on Medical Research, the United States Public Health Service and the Food and Drug Administration[1] indicates that efforts to relate results quantitatively to various dosage schedules may be partially invalidated. There have been changes in the purity, potency and composition of commercial peni-

---

Read before the Section on Dermatology and Syphilology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

From the Tulane University of Louisiana School of Medicine (Drs. Platou and Hill), the University of Pennsylvania School of Medicine (Dr. Ingraham), the Johns Hopkins University School of Medicine (Dr. Goodwin), the University of Texas School of Medicine (Drs. Wilkinson and Hansen) and Emory University School of Medicine (Dr. Heyman).

This report represents work performed under several contracts recommended by the Committee on Medical Research of the Office of Scientific Research and Development and the respective universities represented by the authors. Investigation is now being continued under the auspices of the United States Public Health Service, following termination of contracts of the Office of Scientific Research and Development.

[1] The Changing Character of Commercial Penicillin, with Suggestions as to the Use of Penicillin in Syphilis, Committee on Medical Research, the U. S. Public Health Service, and the Food and Drug Administration, Joint Statement, J. A. M. A. 131: 271 (May 25) 1946.

cillin mixtures furnished to us since this study began. There have also been considerable variations in the actual amount of penicillin in individual vials labeled as containing 100,000 units.[2] Though the extent to which these changes affect results herein reported has not been entirely clarified, they may well modify our conclusions.

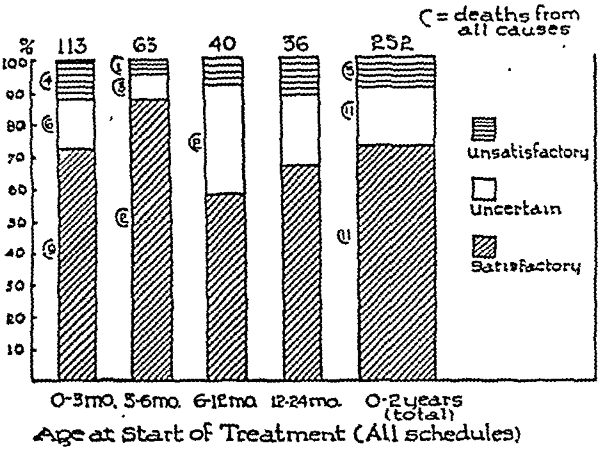


Chart 1.—Outcome by age at start of treatment.

The infants in this series were treated in the period between April 1944 and January 1946. Two hundred and nineteen of them were Negro and 33 were white; there were 118 boys and 134 girls. One hundred and thirteen infants were under 3 months of age, 63 between 3 and 6 months; 46 were treated in the second half of the first year, and 36 were treated during the second year of life.

An empiric scale has been used to judge the clinical severity of the disease: grade 4 indicates a florid example, specifically including demonstration of treponemes, characteristic osseous changes and abnormalities in the spinal fluid. Grade 3 is similar but lacks any one of these three objective demonstrations. Grade 2 has only one of them, and grade 1 presents undoubted manifestations which are proved to be syphilitic only by appropriate serologic tests. A plus sign following any of the first three designations indicates that the examiner believed that the case would fall in the next higher group, but one specific portion of the examination was omitted or was unsatisfactory. A negative status is of course synonymous with latency in this scheme of classification. For purposes of this study, the disease of patients graded 2 plus or more was considered "severe," that of the others "mild."

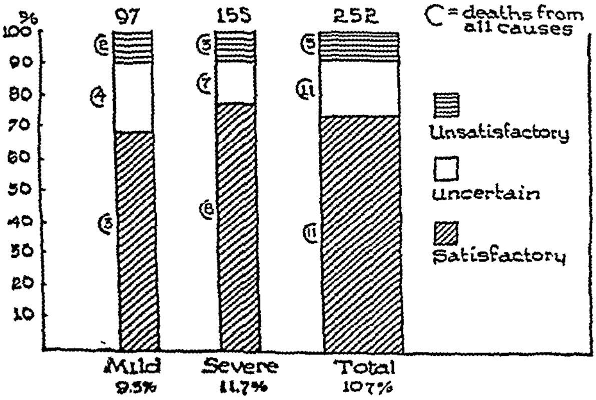


Chart 2.—Outcome by clinical severity at start of treatment in 252 infants.

Almost all the reactions to therapy were febrile in nature. Because of frequent associated infections, it was necessary to define these reactions arbitrarily as follows: febrile, grade I is a rise in temperature of not more than one degree Fahrenheit from the pretreatment level; grade II is a rise of from one to two degrees above pretreatment level, and grade III, any rise over two degrees.

A *satisfactory* outcome signifies the subsidence of observed clinical manifestations in conjunction with negative or progressively declining serologic titer. An *unsatisfactory* result denotes the persistence of reversible manifestations with an unchanged or rising serologic titer or with relapse. The designation *uncertain* indicates that enough time had not elapsed for proper inclusion in one of the other two categories or that legitimate confusion in the interpretation of clinical or serologic results existed. We have defined *serorelapse* as follows: (*a*) if at least two preceding serologic tests were negative over a period of at least one month and then became positive in undiluted serum or in any dilution of serum, confirmed by two subsequent tests of equal or increasing positivity; or (*b*) if the preceding serologic tests were positive in a constant or decreasing titer and then two consecutive serologic tests showed the titer increasing to a value at least four times the point of inflection or two consecutive serologic tests demonstrated a consistent upward trend.

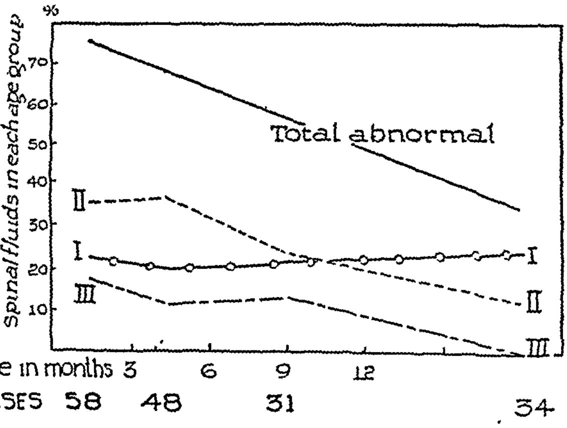


Chart 3.—Type of spinal fluid at start of treatment by age in 171 infants.

Along with appropriate supportive care the infants in this series received total dosages of sodium penicillin varying from 770 to 150,000 units per kilogram of body weight. Among those who completed treatment, the smallest total dosage actually received was 12,000 units. For schedules of 40,000 units or less, the drug was usually administered in aqueous solution, divided into sixty equal intramuscular doses, every three hours over a period of seven and one-half days. For the larger schedules the same plan was followed, but the total dosage was divided into one hundred and twenty equal injections given over a period of fifteen days. Because as much time has not elapsed since these heavier schedules have been used, final comparison of results related to dosage is not yet feasible.

As expected, the majority of "severe" examples of infection (on the grading basis described previously) were encountered in the youngest age groups, the disease of about two thirds of these infants being classed as 2 plus or higher. Among the older infants this situation was almost reversed, the majority of infections now being legitimately characterized as "mild."

---

[2] Moore, J. E.: Personal communication to the authors.

The outcome by age at start of treatment is shown in chart 1. Allowing for varying proportions in the several age groups classified as uncertain (because of inadequate follow-up), there is no significant difference in satisfactory results with age. Apparently poorer results observed in infants treated during the first three months of life compared with those treated in the next trimester probably indicate generally lowered resistance among the youngest infants, or "survival of the fittest" (chart 1). Nineteen of 27 deaths from all causes occurred in infants who were under 3 months of age when treated; undoubtedly the ravages of syphilis, treated or untreated, leave these youngest patients particularly prone to intercurrent diseases. Marginal numerals encircled at the left of each column in charts 1, 2, 6, 7 and 8 refer only to the 27 deaths; a more detailed analysis of these is presented later. The percentage of unsatisfactory results was about equal in mild and severe cases (chart 2). Deaths from all causes have occurred with about equal frequency in mild (9.3 per cent) and severe (11.5 per cent) cases, suggesting that neither severity of infection, as we have graded it, nor penicillin therapy were factors contributing to death.

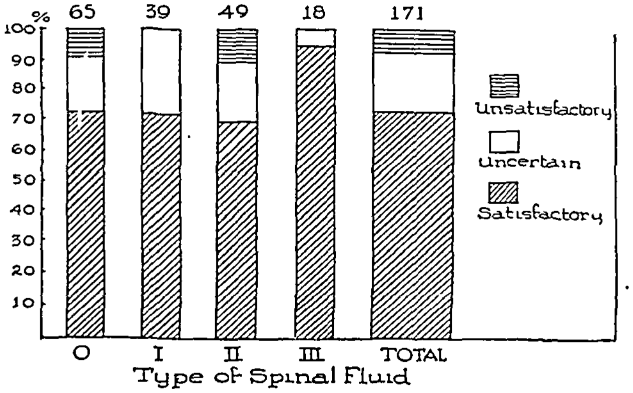


Chart 4.—Outcome by cerebrospinal fluid grade at start of treatment in 171 infants.

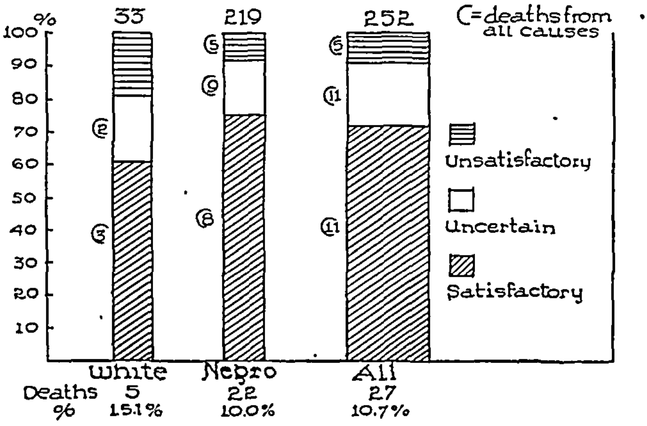


Chart 5.—Congenital syphilis treated with penicillin; outcome by race.

Spinal fluids were examined just prior to the initiation of treatment in 171 infants and were classified according to the usual scheme. In only 65 instances (37.4 per cent) was the fluid considered normal. Type I fluid, i. e., an increase in cells or protein or both, was noted in 39 (22.2 per cent); type III, or the paretic formula, was encountered 18 times (11.1 per cent) and the remaining 49 (29.2 per cent) were found to be intermediate—type II. Among the 106 infants who had cerebrospinal fluid changes attributable to syphilis, there were only 6 examples of clinically recognizable neurologic disorder. Changes in spinal fluid were commonest in younger infants, as noted in chart 3; they were encountered in 76 per cent of fluids from infants under the age of 3 months but in only about 35 per cent of those examined during the second year of life. The proportion having type I fluids remained fairly constant at about 22 per cent, whereas there was a progressive decrease in the number with fluids of types II and III. These data reflect, of course, a tendency for abnormalities of the spinal fluid to disappear spontaneously with the passage of time.

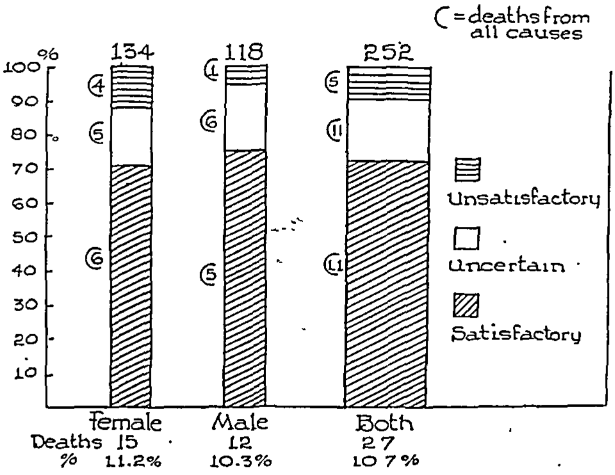


Chart 6.—Congenital syphilis treated with penicillin; outcome by sex.

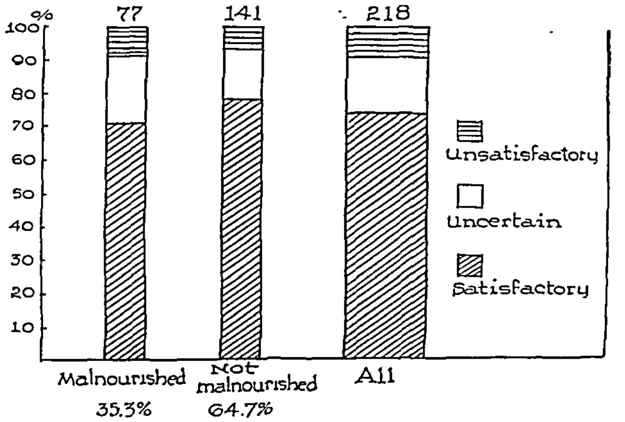


Chart 7.—Outcome by nutritional status at start of treatment (218 infants).

The effect of treatment on these cerebrospinal fluid abnormalities was gratifying (table 1). Although most of the follow-up examinations were made after an interval of about six months, a few were performed too soon after the cessation of treatment for a proper evaluation of results. Early improvement in clinical manifestations of neurosyphilis was encouraging in all but 1 case, but it is of course far too early to make more than a tentative statement in this regard. Among 91 infants, pretreatment abnormalities of the spinal fluid were present in 72.5 per cent, post-treatment, in only 20.9 per cent. To judge from observations made so far (chart 4), little if any prognostic significance can be attached to these abnormalities of the cerebrospinal fluid.

Although only 15 per cent of those treated were white, results were apparently poorer for them than for Negro infants (chart 5); among the latter the results of treatment for a comparatively large number were classed as satisfactory and few as unsatisfactory.

Results appeared to be about the same in boys as in girls (chart 6); no explanation for the questionable difference in outcome by sex can be made. Deaths from all causes occurred with approximately equal frequency in the two sexes.

We have the clinical impression that the nutritional status of the patient when treatment is initiated has some prognostic import, though this hypothesis is not borne out by the data of chart 7. A few more satisfactory and less uncertain or unsatisfactory results were observed in 141 infants who exhibited an apparently normal nutritional state than among 77 infants who were malnourished. It is of interest that only about 35 per cent of these syphilitic babies exhibited recognizable degrees of malnutrition and that such a large majority of this truly representative group of syphilitic infants were considered normal in this respect.

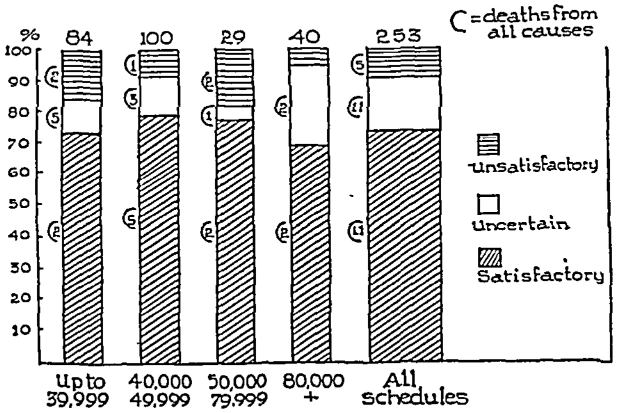


Chart 8.—Outcome by total dosage of sodium penicillin in units per kilogram of body weight.

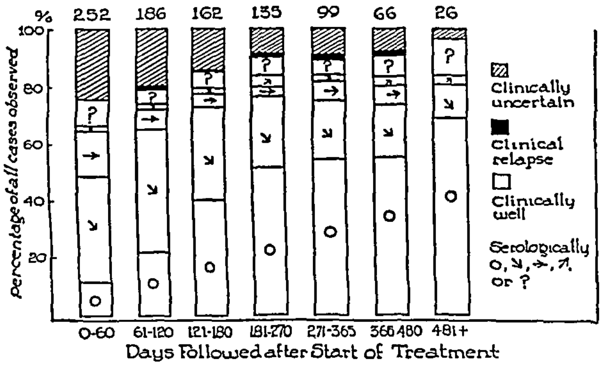


Chart 9.—Status at a specified time after treatment of 252 cases of congenital syphilis; all treatment schedules.

As stated previously, data regarding the outcome of treatment related to the dosage schedules employed are beclouded by at least two important factors: (1) uncertainty as to the actual amount, variety and potency of sodium penicillin administered to any infant and (2) shorter periods of observation for infants treated most recently or with larger amounts of the drug. Expressed ranges were necessary for tabulations because of irregularities in the total dosage given to some infants, though most schedules were calculated to furnish multiples of 20,000 units of sodium penicillin per kilogram of body weight. Among the relatively small number of cases included within any narrow range, wide variations in outcome were observed. Grouping them into larger ranges, as shown in chart 8, one notes that satisfactory results were observed in from 67.5 to 77 per cent. The relatively large number of uncertain results in the group of 40 infants who received 80,000 or more units of the drug per kilogram of body weight is probably due to the fact that they were most recently treated. For all dosage schedules combined, the outcome was satisfactory in about 74 per cent of the cases, unsatisfactory in about 9 per cent and uncertain in approximately 18 per cent. Deaths during or after treatment could not be correlated with the dosage of penicillin used.

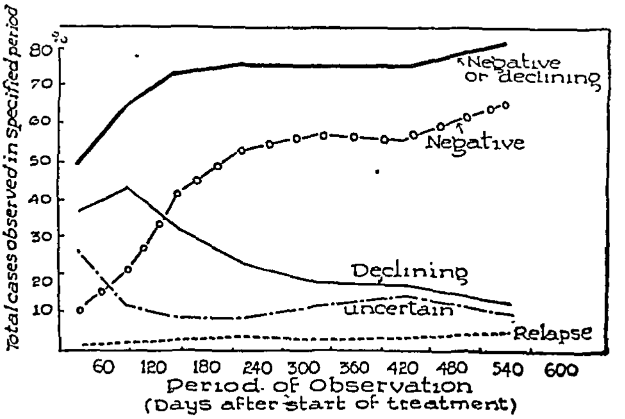


Chart 10.—Serologic status of those clinically well.

If one considers results related to dosage only in cases followed for more than two months, more striking differences are apparent (table 2). After this early interval uncertainties are reduced to a fairly constant level. One notes more satisfactory and fewer unsatisfactory results among infants receiving more than 40,000 units of sodium penicillin per kilogram of body weight.

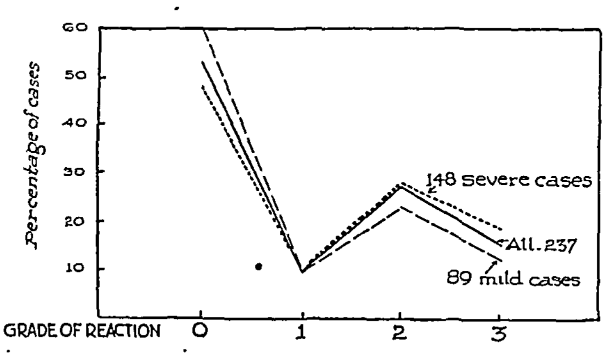


Chart 11.—Febrile reactions during treatment as observed in 237 cases. The grade of reaction is classified as: 1, rise of not more than 1 degree F. from pretreatment level; 2, rise of 1 to 2 degrees F. from pretreatment level, and 3, rise of more than 2 degrees F. from pretreatment level.

Increasingly satisfactory results were noted as time passed after treatment (chart 9). Uncertainties became less frequent. Clinical relapses were distinctly unusual, only 6 (2.4 per cent) being recognized in the entire group. With an increase in the proportion of patients becoming clinically well, there was simultaneous serologic improvement. The percentage of cases in which patients became clinically well and seronegative increased from 11.1 per cent among those observed for less than sixty days up to 69.2 per cent among those followed for more than sixteen months. Most serums became negative between the fourth and twelfth months after treatment, but some were still declining or turning negative even in the last two periods of observation (chart 10). The proportion of stationary, uncertain or rising titers fluctuated relatively little beyond the first two months subsequent to treatment.

Clinical relapse occurred as early as three months and as late as eleven months after initial therapy. Early results of treatment had been considered satisfactory for all 6 examples. The interval between the first rise in serologic titer and evidence of clinical relapse was observed to be as long as seven months in 2 instances. For this reason and because criteria for serologic relapse have been satisfied without subsequent evidences of clinical relapse for as long as eighteen months, we have not consistently retreated infants for serorelapse alone. Clinical relapses have generally been treated with two or more times the original dosage. Results have again become satisfactory in all 6; 1 became seronegative, 5 exhibited a serologic decline, but serorelapse alone recurred in 1 patient after eleven months. Data concerning these patients appear in table 3.

TABLE 1.—*Congenital Syphilis Treated with Penicillin; Changes in Spinal Fluid in 91 Infants*

Pretreatment		Post-Treatment *			
		0	I	II	III
0	25	24	..	1	..
I	17	14	3	..	..
II	33	23	7	3†	..
III	16	11	3	1†	1†
Total	91	72	13	5	1

Abnormal: pretreatment 72.5%; post-treatment 20 9%

* Interval of 8 days to 15 months, usually 6 months.
† Reexamined in less than 19 days.

TABLE 2.—*Treatment of Early Congenital Syphilis with Penicillin*

Results in 141 living infants observed from 60 to 480 days after treatment with penicillin.*

Dosage, U/Kg.	Number	Satisfactory	Unsatisfactory	Uncertain
Up to 39,999	66	49 (74.2%)	13 (19.7%)	4 (6.1%)
40,000 or more	75	67 (89.3%)	4 (5.3%)	4 (5.3%)
Total	141	116 (82.2%)	17 (12 1%)	8 (5.6%)

* November 1945.

Aside from the transient febrile reactions to be described, only 10 infants had mild or dubious therapeutic shocks. None were considered severe enough to stop or modify any treatment plan. Over half the patients experienced no reaction. Chart 11 indicates the frequency with which the three grades of febrile reactions were encountered. Reactions of grades II and III occurred a bit oftener in severe cases. From our experience, there is no justification whatever for gradually "building up" the dosage of penicillin in order to avoid reactions.

There were 27 deaths (tables 4 and 5), 9 of which occurred within fourteen days after treatment was started. Among these 9 patients, manifestations of syphilis were known to be improving or healed in 4, had not changed appreciably in 2 and were considered to be worse in 3; serologic titers had decreased in 4 and remained stationary in 1, and tests had not yet been repeated in 4. In regard to syphilis, results of therapy in these 9 patients were considered satisfactory for 2, unsatisfactory for 3 and uncertain for 4. Causes for death other than syphilis were apparent for 8 of these 9 infants, but there was no opportunity to examine the ninth one. Pathologists found anatomic evidences of syphilis in 5, and autopsies were not performed on 3; in 1 case evidences of syphilis were not observed at autopsy. Two of these infants had received only a few injections of penicillin and 1 died on the first day, 1 on the second day of treatment; of the remaining 7, 6 had received 40,000 or more units of penicillin per kilogram of body weight and 1 received less than this amount (23,000 units per kilogram).

TABLE 4.—*Status of Syphilis at Time of Death in 27 of 253 Infants Treated (By Interval to Death)*

Time	Number	Satisfactory	Unsatisfactory	Uncertain
<14 days	9 (3.6%)	2	4	3
14 30 days	8 (3.2%)	2	1	5
>1 mo.	10 (3.9%)	7	..	3
0 6 mo.	27 (10.7%)	11 (41%)	5 (18%)	11(41%)

Of 8 infants who died in the interval between fourteen days and one month after treatment was initiated, clinical manifestations of syphilis were improved or healed in 4, unchanged in 3 and worse in 1. Serologic titers had been repeated for only 4; 2 were declining, 2 unchanged. Results as to syphilis were considered satisfactory for 2 and unsatisfactory for 1 but uncertain for 5. Immediate causes for death other than syphilis were apparent in 6 patients, and 2 could not be examined. Autopsy disclosed evidences of syphilis in 2 children, no evidences of syphilis in 2; the other 4 were not examined pathologically. Of these 8, 5 had received treatment schedules of 40,000 or more units of the drug per kilogram of body weight, and 3 had received less.

Among 10 infants who died from one to six months after treatment was initiated, clinical manifestations of syphilis were healed or improved in all; serologic titers were negative or declining in 7, rising in 2 and equivocal in 1. The effect of treatment on syphilis was judged to be entirely satisfactory for 7, and there had been too few observations for proper evaluation of the results in 3. Causes for death other than syphilis were recognized for all but 2; these died at home, and reliable information could not be obtained. Only 1 autopsy was performed, and this did not reveal evidences of syphilis. The total dosage of penicillin was 40,000 units or more per kilogram of body weight for 7 patients, less than this total amount for 3.

TABLE 5.—*Status of Syphilis at Time of Death in 27 of 253 Infants Treated (By Dosage Schedule Employed)*

	Status of Syphilis			
Dosage, Units/Kg.	Satisfactory	Unsatisfactory	Uncertain	Cases
To 39,999	2	2	5	9
40,000 - 49,999	5	1	3	9
50,000 - 79,999	2	2	1	5
80,000+	2	..	2	4
Total	11	5	11	27

We emphasize that a fatality rate of 10.7 per cent from all causes in this series is slightly lower than that observed among a similar group of infants treated by older plans which employ arsenical compounds and heavy metals.[3]

SUMMARY AND CONCLUSIONS

Among 252 infants with congenital syphilis, a single course of penicillin administered over a period of seven and one-half to fifteen days has yielded satisfactory results in 73 per cent, unsatisfactory in 9.1 per cent; and in 17.9 per cent results are still classed as uncertain. Empirically judged severity of syphilis or cerebrospinal abnormalities had little prognostic meaning; the latter improved remarkably after treatment. Dosage schedules employing more than 40,000 units of the drug per kilogram of body weight yielded better results than those employing lesser amounts. There is some evidence to suggest that larger dosage schedules administered over a longer period of time may be more effective. Dramatic clearing of active manifestations of infection during or *soon after treatment is the rule.* Clinical relapses have been infrequent, with only 6 encountered at intervals of three to eleven months after treatment. As time passes, the number of cases with unsatisfactory or uncertain results diminishes, while there is a proportionate increase in that of symptomatic and serologic cures. Changes to seronegativity are not unusual a year or more after the completion of treatment, though most babies become seronegative between the fourth and twelfth months following therapy.

Judged by outcome, all planned treatment schedules employing sodium penicillin alone have been remarkably effective. Their efficacy, rapidity and safety in this "exquisitely chronic" disease have amply demonstrated that this drug is the best single agent yet employed for the treatment of congenital syphilis.

Penicillin therapy has not altered the familiar contention that treatment of the baby is far more important than treatment of its syphilis. Hazards inherent in socioeconomic environments responsible for a high incidence of this disease undoubtedly account for the high fatality rates seen under any form of treatment. Although syphilis or its direct sequelae must be regarded as potent contributory factors, deaths are almost always adequately explainable on nonsyphilitic bases.

Until the true makeup of commercial penicillin has been clarified or until crystalline fractions are evaluated, we offer the following broad suggestions for therapy:

1. Young syphilitic infants should receive a total dosage of at least 100,000 units per kilogram of body weight.

2. This amount should be divided into approximately one hundred and twenty equal intramuscular injections given over a period of twelve to fifteen days.

3. These injections should be given at intervals of no longer than three hours around the clock.

Table 3.—*Relapses*

Initial Treatment					Result		Relapse		Retreatment		
										Result	
Race	Sex	Age	Severity	Dosage, U./Kg.	Clinical	Serologic	Serologic at	Clinical at	Dosage, U./Kg.	Clinical	Serologic
W	♂	6 wks.	3+	19,000	Satisfactory	Decline	3d mo.	3d mo.	36,000	Excellent	Decline *
N	♂	11 wks.	2+	39,000	Satisfactory	Decline	3d mo.	3d mo.(?)	42,000	Improved	Uncertain
N	♂	4 mos.	3+	40,000	Satisfactory	Decline	4th mo.	4th mo.	140,000	Excellent	Negative
N	♀	11 wks.	3	20,000	Satisfactory	Decline	111 days	270 days	40,000	Satisfactory	Decline
N	♀	13 mos.	2+	20,000	Satisfactory	Neg. (3 mos.)	116 days	326 days	40,000	Satisfactory	Decline
N	♀	2 mos.	2+	40,000	Satisfactory	Decline	104 days	328 days	80,000	Satisfactory	Decline

* To second serologic relapse at one year; retreated with 41,000 units of calcium penicillin per kilogram of body weight and remains clinically well but serologically unchanged.

ABSTRACT OF DISCUSSION

Dr. Arild E. Hansen, Galveston, Texas: Dr. Platou has made an excellent presentation and summary of an enormous amount of data. We in the Department of Pediatrics at the University of Texas have been happy to cooperate with him and the other investigators in carrying on these studies. By such cooperative efforts, the solution to the problem may be obtained much earlier and more convincingly. My observations regarding impressions of penicillin in congenital syphilis I owe especially to my colleague Dr. Erle E. Wilkinson, who has been in charge of the syphilis clinic for children in our institution. We have been impressed with the dramatic results reported for the dermatologic manifestations in the small infants, which heretofore were a particular problem because of the nursing care and also the time-consuming and protracted interval necessary in keeping the child under observation. Interesting is the finding that the most satisfactory results occurred in the younger age group. The author has not dealt with the subject in regard to patients with the late manifestations of the disease in whom results do not seem to be so gratifying. In one of our patients suffering with a Clutton's joint, within a week following a course of penicillin there developed a similar involvement of the other knee. A second course of penicillin was given, and five days after its completion interstitial keratitis occurred. In another child treated for bilateral Clutton's joints interstitial keratitis developed following a course of penicillin. Of course, it is well known that interstitial keratitis frequently occurs following the usual antisyphilitic therapy. Of 11 children with interstitial keratitis, 4 appeared to have a favorable clinical response. In the remaining cases either improvement was not noted or the results were difficult to evaluate. In 8 children with late neurosyphilis, a striking clinical improvement was not noted: in 4 there was serologic evidence of benefit. In general, it would appear from preliminary studies that in late congenital syphilis there has been no definite tendency for decrease in the serologic titer, which is in contrast to the decreasing titer in the early congenital syphilis treated with penicillin. It may be that continued observation of patients with early congenital syphilis will lead to a better understanding of the nature of the production of the manifestations of the disease. It will be interesting to follow the small infants and children who have had penicillin early to note the incidence of the development of Hutchinson's teeth. In the overall consideration of the problem, in spite of our dramatic results in the treatment of early cases and the relatively low remission rate, in order to hope to solve the problem unequivocally we must look to the adequate treatment of the mother.

Dr. R. V. Platou, New Orleans: I should like to reiterate the following statements. Until the status of commercial penicillins has been clarified and until our current observations on penicillin G have been further amplified, we recommend a total dosage of not less than 100,000 units per kilogram of body weight of the present commercial penicillins given at intervals of no longer than three hours over a period of not less than fifteen days. All 6 of our patients who had relapses have been retreated with twice the initial dosage of penicillin, and results have so far been satisfactory in each case. I should like to elaborate on the deaths observed in this group of infants. That deaths could not be related to the dosage of penicillin employed or to the severity of syphilis at the beginning of therapy is suggested by the data obtained. As far as response of syphilis to treatment is concerned, there were twice as many satisfactory outcomes as unsatisfactory ones among these deaths. Unfortunately, 11 deaths occurred elsewhere, so that the status of syphilis at the time of death remained uncertain. The status of syphilis could not be significantly related to the time at which death occurred. Among 9 infants who died within two weeks, including 2 who died during treatment, results were considered satisfactory in 2, unsatisfactory in 4 and uncertain in 3. Again, it is notable that among infants dying of all causes subsequent to treatment there were more satisfactory than unsatisfactory results as far as treatment of syphilis was concerned.

---

[3] Goodwin, M.: Personal communication to the authors; unpublished data in fifty-five unselected cases of congenital syphilis.

DIET LOW IN SALT (SODIUM) IN CONGESTIVE HEART FAILURE

EDWIN O. WHEELER, M.D.
WILLIAM C. BRIDGES, M.D.
and
PAUL D. WHITE, M.D.
Boston

The importance of quantitative restriction of salt, that is, sodium, in the treatment of congestive heart failure has not been generally appreciated, despite the slow accumulation of clinical and laboratory evidence of its place in the control of water balance in the body. With a few notable exceptions, casual limitation of salt and fluid has been the custom throughout the country, and generally more stress has been placed on the restriction of fluid than on that of salt.

Karrell[1] as early as 1866 observed that a diet consisting of 600 to 800 cc. of milk a day often caused diuresis in edematous patients, but he apparently did not realize that the low salt content of such a regimen was largely responsible for its beneficial effects. Physicians have employed this type of therapy successfully down to the present day, generally without appreciating that the restriction of salt rather than of fluid is the important factor. That sodium chloride plays a part in the development of edema was demonstrated by Achard and Loeper[2] in 1901. They fed patients with congestive failure samples of salt and noted that the salt was not excreted in the urine, as it was in normal subjects, and that the blood sodium did not increase. From this they concluded that the ingested salt had contributed to the edema. In 1903 Merklen[3] and Widal and Lemierre[4] used a milk diet in the treatment of edematous cardiac and nephritic patients. Milk was used because of its low salt content, and, as noted by Karrell, an effective diuresis often occurred on this regimen. Widal and Lemierre pointed out that when the intake of salt was kept low their patients could tolerate a large intake of fluid, up to 3 liters a day, without reducing the effectiveness of the treatment.

In spite of these early studies and the later work of many investigators, in particular Gamble,[5] Peters and Van Slyke[6] and Newburgh,[7] which clarified the relationship of electrolyte and fluid balance and clearly demonstrated the fallacy of restricting the intake of water and the importance of restricting that of salt as a means of controlling edema, most physicians continued to treat edematous patients with more stress on fluid than on salt restriction.

The practical application of these principles to the treatment of congestive heart failure awaited the work of Schroeder[8] in 1941. He showed that the restriction of salt was important and that if the intake of salt was held at a low level, the intake of water could be raised to as much as 4 liters a day without causing the formation of edema in patients with congestive failure. Similar investigations have been reported by Schemm,[9] by Proger and his group[10] and by Ellis.[11] The first-named of these workers advocated a very large intake of fluid in addition to a diet low in sodium. In spite of these reports, which indicate the efficacy of salt restriction in the treatment of congestive failure, its application has been neglected.

The signs of congestive failure, such as elevated venous pressure, edema and ascites, have in the past been explained on the basis of back pressure from the failing heart. According to this concept the following series of events occurs: cardiac failure → increased venous pressure → elevated capillary hydrostatic pressure → edema. Recently Warren and Stead[12] have shown that this sequence of events may not be the only explanation. They demonstrated that by feeding salt to the compensated cardiac patient kept at rest in bed evidence of congestive failure can be produced. When this was done, gain in weight and edema preceded rather than followed an increase in the venous pressure. Therefore they postulated the following sequence of events: heart failure → diminished renal excretion of sodium and water → increased blood volume and edema → elevated venous pressure. Neither of these concepts accounts for all the clinical and laboratory observations in congestive heart failure, but the latter explanation does make clear the importance of salt in the formation of edema.

Thus, the use of a diet low in sodium in the treatment of patients with congestive heart failure is based, first,

---

From the Massachusetts General Hospital; Graduate Assistant in Medicine (Dr. Wheeler), Commonwealth Fund Research Fellow, 1945-1946 (Dr. Bridges) and physician, Massachusetts General Hospital (Dr. White).

Read before the Section on Internal Medicine at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

[1] Karrell, P.: De la cure de lait, Arch. gén. de. méd. **2:** 513-533, 1866.

[2] Achard, C., and Loeper, M.: Sur la rétention des chlorures dans les tissus au cours de certains états morbides, Compt. rend. Soc. de biol. **53:** 346, 1901.

[3] Merklen, P.: La retention du chlorure de sodium dans l'oedeme cardiaque, Bull. et mém. Soc. méd. d. hôp. de Paris **20:** 725-731, 1903.

[4] Widal and Lemierre: Pathogenic de certains oedémes brightiques: Action du chlorure de sodium ingèré, Pathogénie Bull. et. mém. Soc. méd. d. hôp. de Paris **20:** 678-699, 1903.

[5] Gamble, J. L.; Ross, G. S., and Tisdall, F. F.: The Metabolism of Fixed Base During Fasting, J. Biol. Chem. **57:** 633-695, 1923.

[6] Peters, J. P., and Van Slyke, D Chemistry, Baltimore, Williams & Wilkins 3.

[7] Lashmet, F. H.: Dietary Trea New-burgh, L. H., and Mackinnon, F.: Th York, The Macmillan Company, 1934, chap. 12, pp. 225-258.

[8] Schroeder, H. A.: Studies on Congestive Heart Failure: I. Importance of Restriction of Salt as Compared to Water, Am. Heart J. **22:** 141-153, 1941.

[9] Schemm, F. R.: High Fluid Intake in Management of Edema, Especially Cardiac Edema: I. Details and Basis of Régime, Ann. Int. Med. **17:** 952-969, 1942; High Fluid Intake in Management of Edema, Especially Cardiac Edema: II. Clinical Observations and Data, ibid. **21:** 937-976, 1944.

[10] Proger, S.; Ginsburg, E., and Magendantz, H.: Effects of Ingestion of Excessive Amounts of Sodium Chloride and Water on Patients with Heart Disease, Am. Heart J. **23:** 555-566, 1942.

[11] Ellis, L. B.: Relative Importance of Salt and Fluid in the Management of Congestive Heart Failure, Tr. New England Heart A., 1942, pp. 33-34.

[12] Warren, J. V., and Stead, E. A., Jr.: Fluid Dynamics in Chronic Congestive Heart Failure: An Interpretation of the Mechanism Producing the Edema, Increased Plasma Volume and Elevated Venous Pressure in Certain Patients with Prolonged Congestive Failure, Arch. Int. Med. **73:** 138-147 (Feb.) 1944.

on the observation that their degree of failure is often directly correlated with their intake of salt and, second, on the modern concepts of the pathologic physiology of the condition.

DETAILS OF THE DIET LOW IN SODIUM

During the last one and a half years we have treated many patients with congestive failure with a diet low in sodium, in addition to the usual measures, such as rest, digitalis and diuretics. In contrast to our former practice, they have been allowed fluids as they desired or, occasionally, have been urged to drink larger amounts, up to 3 liters a day. The diet we have used in the hospital contains about 625 mg. of sodium, or 1.5 Gm. of salt, and 1,800 calories (see the accompanying table). The diet has yielded a neutral ash, though its reaction is probably of little importance, since most of the patients were given ammonium chloride as part of their treatment. In ambulatory office patients the diet has not been so strict, emphasis being placed principally on the elimination of salt from all cooking and the use of salt-free bread and butter.

The comparative amounts of salt (grams per day) contained in diets varying in the degree of salt restriction are as follows: (1) average diet, without salt restriction, 6 to 15 Gm.; (2) average diet, without salt added at table, 4 to 7 Gm.; (3) average diet, without salt added in cooking, 3 to 4 Gm., and (4) low sodium diet, 1.5 to 2.0 Gm. The difference in the salt content of the last two diets is largely due to the use of salt-free bread and butter in the low sodium diet. It is evident that the degree of salt restriction needed depends on the patient's response to treatment, and no doubt some patients are able to tolerate more salt than others.

There are certain precautions which must be carefully observed in following a diet low in sodium:

1. Salt, soda or baking powder should not be used in the cooking or at the table. Substitutes for salt which contain sodium should not be used.

2. Sweet butter or butter that has been washed free of salt may be used. Bread and salad dressings must be prepared salt free. Canned foods, unless prepared salt free, should not be used.

3. Salty appetizers or salted foods, such as nuts, potato chips, sardines, olives, pickles and relishes, are to be guarded against. Cheese and smoked or salted meats are not permitted.

4. Medicines containing sodium should not be used against gas or indigestion. Calcium salts are helpful in this regard.

The advantages of the regimen are threefold:

1. It enables one frequently to control edema which cannot be controlled by the usual measures; that is, by digitalis, moderate salt and fluid restriction, and diuretics.

2. It diminishes the necessity for frequent use of mercurial diuretics or eliminates entirely the need for their use.

3. It enables the patients to take more fluid, eliminates troublesome thirst and insures an adequate intake of fluid to meet the body's demands.

The following disadvantages result from this diet:

1. Some patients find it difficult or impossible to obtain such a diet, especially those who eat their meals in boarding houses or restaurants.

2. Patients almost invariably complain about the flat taste of the food, particularly when they are starting on the diet, and occasionally will reject the regimen because of this.

3. Although it is possible so to deplete a patient by a low sodium intake, especially if repeated mercurial diuretics are being given concurrently, that symptoms of lack of sodium may appear, we have not met with this difficulty in our patients.

Although these objections are occasionally difficult to overcome, they are outweighed by the decided relief that patients often obtain from the distressing symptoms of congestive failure (notably, dyspnea, insomnia and edema) and from the tiring effects of frequent mercurial diureses.

Admittedly, the flat taste of the diet is the greatest single obstacle to its use, and a satisfactory substitute for salt would be helpful when employing this regimen. Although other salts, such as potassium and ammonium chloride are not entirely satisfactory as substitutes, they are helpful when used in small amounts. We are investigating the use of more acceptable substances.

Low Sodium Neutral Ash Diet Without Added Salt (Typical Case)

Acid: Normal Hydrochloric Acid, Cc.	Base: Normal Sodium Hydroxide, Cc.		Food, Gm.	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Sodium, Gm.
	6.4	Orange juice	120	...	....	12.0	0.014
	4.9	Grapefruit juice	120	0.4	....	13.2	0.005
6.5		White bread (made without salt)	100	9.2	1.3	53.1	0.032
	9.9	Whole milk	620	20.5	24.8	31.0	0.316
		Salt-free butter	45	0.5	38.3	....	0.003
2.0		Farina	20	2.2	0.3	15.3	0.013
13.2		Beef	80	16.2	6.3	....	0.072
5.3		Chicken	45	9.7	1.1	....	0.042
8.5		Egg	50	6.7	5.3	....	0.070
	5.6	Fresh tomatoes	100	1.2	0.2	4.0	0.012
0.9		Fresh peas	100	3.6	0.2	9.8	0.013
	4.1	Applesauce	120	0.2	0.1	23.6	0.013
		Sugar	35	...	....	35.0	
	0.4	Cream	60	1.4	9.6	2.4	0.018
36.4	31.3			71.8	87.4	199.4	0.623

Calcium, 1,870 Gm.; sodium content, 0.623 Gm.; chloride, 0.9 Gm.; sodium chloride, 1.5 Gm.; total fluids (including water), 2½ to 3 liters per diem.

RESULTS

During the last year and a half we have treated 50 patients with congestion due to heart disease of all types with the regimen outlined above. In general, these patients were selected because previous therapy was not satisfactory; that is, dyspnea and edema were not controlled, or mercurial diuretics were used at distressingly frequent intervals. The duration of treatment has varied from one month to one and a half years; seven months has been the average duration. For the most part these patients have been ambulatory and have been obliged to get their diet at home.

Only 4 of the patients were unable to follow the diet satisfactorily. The other 46 patients were able to cooperate and maintain a satisfactory restriction of sodium.

In 11 of the patients the results of therapy with the low sodium regimen could not be evaluated because of many factors, such as surgical procedures, inadequate therapy prior to the onset of the regimen and changes in activity.

Of the remaining 35 patients who faithfully followed the diet, 13 did not show improvement, while 22 were better; of the latter group 10 showed great benefit. In no instances were patients made worse by this therapy. Improvement was judged by the decrease in signs of congestive failure; that is, orthopnea, basal rales, enlargement of the liver, edema, decrease in the need for mercurial diuretics and ability to increase activity.

Eleven of these 35 patients had rheumatic valvular disease, some with active rheumatic fever; of this group only 2 showed improvement which was not pronounced. On the other hand, 20 patients had hypertensive and/or coronary heart disease; of these, 18 showed improvement, in 9 of whom it was pronounced. Of the 4 remaining cases of miscellaneous etiology, 3 patients improved.

ILLUSTRATIVE CASES

The following cases are illustrative of the beneficial effect of a low salt intake in the treatment of patients with congestive failure and edema. The first case (chart 1) illustrates well the considerable diuresis and loss of body sodium which may be induced by a diet low in sodium. For several weeks his congestion had been quite stationary, while he was in the hospital on a diet containing 9 Gm. of sodium chloride. The diuresis was induced by a diet containing 1.7 Gm. of sodium chloride and continued when the salt content of the diet was raised to 4.7 Gm.

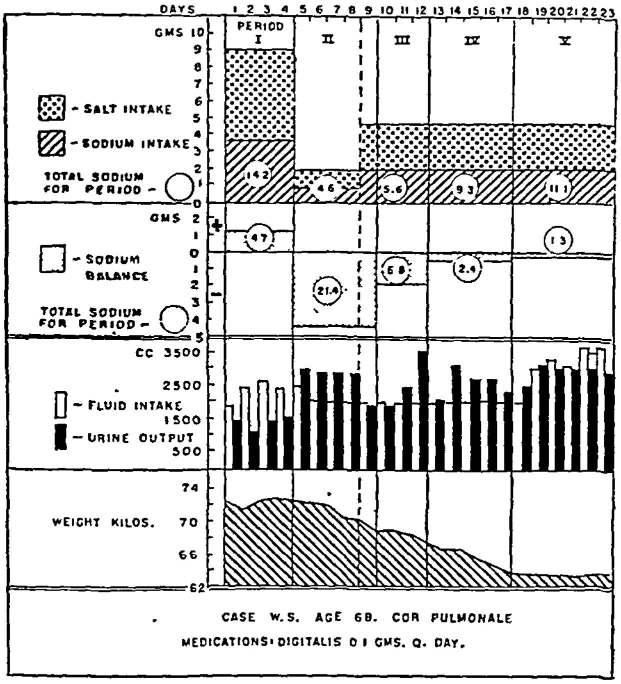


Chart 1.—Diuresis induced by a diet low in sodium, case 1.

The second and third cases (charts 2 and 3) illustate the effect of restricting sodium in 2 ambulatory patients whose obstinate congestion was poorly controlled by the usual means of therapy—regular diet without added salt at the table (a salt content of about 5 Gm.), digitalis, ammonium chloride, and mercurial diuretics consisting of intravenous injections at frequent intervals. In both of these cases the decreased intake of salt was promptly followed by relief from congestion, both pulmonary and peripheral, and from the necessity of using mercurial diuretics. The second of the 3 patients is now living and well, one and a half years after starting the low sodium diet. Being a baker, he has a distinct advantage in being able to prepare his own salt-free bread, a service which he now offers to many of our patients. The third patient resisted the use of the diet for months, because of the flat taste, but after finally agreeing to try it remained free of congestion for three months, until a large myocardial infarct caused his death. These examples demonstrate the usefulness of the low sodium regimen, especially in patients with severe and stubborn congestion.

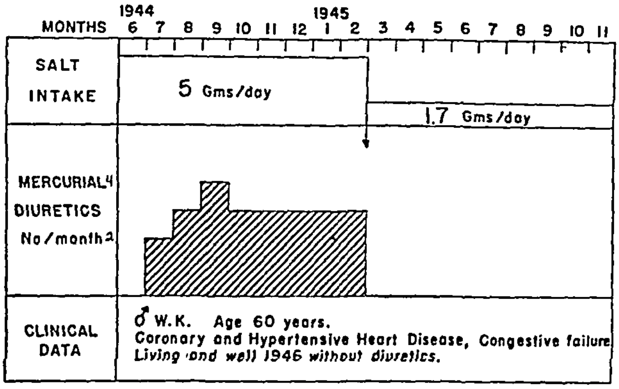


Chart 2.—Effect of sodium restriction in case 2.

COMMENT

The mechanism of the production of edema in heart failure may be dependent on several factors, such as the retention of sodium, increased hydrostatic pressure and, in some cases, a decrease in colloid osmotic pressure due to low serum proteins. Of these various factors, the retention of sodium is one of the most important and at the same time one of the easiest to treat. Since the edema fluid in this condition, like normal extracellular fluid, maintains a constant electrolyte balance with sodium chloride, it is evident that edema fluid cannot be lost without a proportionate decrease in the extracellular salt of the body, the reverse sequence also being true. As long as the intake of salt equals or exceeds the amount of salt excreted, diuresis will not occur.

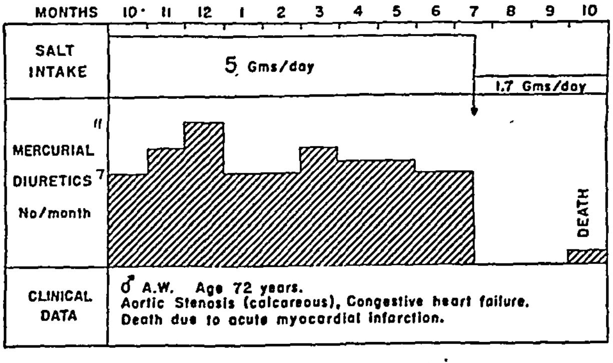


Chart 3.—Effect of sodium restriction in case 3.

Loss of sodium and consequent loss of edema fluid can be brought about either by decreasing the intake or by increasing the excretion of salt. The latter procedure is accomplished by various well known diuretics. The former can usually be achieved by reducing the intake of salt to such levels that the output of sodium will exceed the intake. Our experience, as well as that of others, indicates that a diet containing from 1.7 to 2.0 Gm. of salt will accomplish this in the great majority of patients.

The reason for fluid restriction as practiced in the past is not clear. According to Peters,[6] water acts as a diuretic by increasing the water concentration of the plasma and decreasing the salt concentration, so that the kidneys are stimulated to excrete more than the usual amount of water. An isotonic solution of sodium chloride, on the other hand, does not produce such an effect but is excreted at an exceedingly slow rate. Limitation of fluids can produce dehydration and a consequent slight loss of weight but cannot produce a diuresis. An adequate urinary output cannot be maintained in the presence of great restriction of fluid intake, which is a serious criticism of such therapy. This is especially true in patients with cardiac disease, in whom renal function may already be disturbed.

The optimum intake of water on a diet low in sodium has not been established, but it is evident that patients with congestive failure tolerate comparatively large amounts of fluid without trouble as long as the intake of salt is kept at a low level. Certainly fluid restriction as practiced in the past is wrong, but inasmuch as we have not observed definite benefit from forcing fluids beyond 3 liters a day, and as such an intake is a real trial to the patients, we have allowed them to drink as they wished, advising an intake of at least 2 liters a day.

SUMMARY AND CONCLUSIONS

A diet low in sodium with a liberal intake of fluid has been used, in addition to the usual therapeutic measures, in the treatment of 50 patients with congestive heart failure during the past one and a half years at the Massachusetts General Hospital. Four of these patients were uncooperative, and in 11 the results could not be evaluated. Of the remaining 35, 22 improved. None was made worse. In general, patients with coronary and hypertensive heart disease responded much better than did patients with rheumatic heart disease.

The use of a diet low in sodium in the treatment of congestive failure of the heart is based on sound clinical and experimental ground. Our results and those of others lead us to advocate its more widespread use.

ABSTRACT OF DISCUSSION

Dr. James V. Warren, M.C., A.U.S.: A group in Atlanta, Drs. Stead, Brenner, Merrill and myself, have been interested in the altered circulation in congestive heart failure. Our clinical experience has been the same as that shown by Dr. Wheeler and his associates. The patient is maintained on a low sodium diet and does better; we regard it as an important part of the therapy of chronic congestive heart failure. We all agree that in congestive heart failure there is something wrong with the heart and that the patients may get an elevation of venous pressure and edema. The important point is the interpretation of why they get edema, why they get elevated venous pressure and the relationship between these two phenomena. It is our belief that elevated venous pressure in congestive heart failure may be due to two different factors. In some cases with a very acute decline in cardiac output, the venous pressure may rise precipitously. Such a situation may be seen in patients with pericardial tamponade. It may be seen in patients with acute rapid heart action, paroxysmal tachycardia, for instance. They have abrupt rising of venous pressure. In these patients it is obvious that the venous pressure occurs without any changes in blood value. There is an additional mechanism. In the subjects receiving salt, the venous pressure is presumably elevated by the fact that the blood volume is increased and even after death if one measures the venous pressure, as Starr did, one finds that the static pressure is elevated above normal. There is a second mechanism present, not in acute cardiac failure, but only in chronic cardiac failure. Most patients with chronic cardiac failure, it is our belief, probably have a part of both mechanisms playing a role in the elevation of venous pressure. If one gives digitalis, one may produce abrupt changes in venous pressure. I should like to call attention to a certain group of patients in whom congestive failure has been present and actually treated. With bed rest they are found to have normal venous pressure. If one carefully observes them, even on normal salt intake, they still have an extraordinary avidity for salt; they tend to retain salt to a much greater extent than do normal subjects. Something else, we believe, makes these patients retain salt rather than the elevation of the venous pressure. It can be seen in these patients in the absence of any change in venous pressure. I don't know the answer. Studies by Dr. Merrill and our group have shown an extraordinary diminution in renal blood flow in patients with congestive failure. It may be there is some alteration in renal dynamics which makes for retention of salt and therefore makes these patients develop edema with such great ease. It is our belief that the final answer is not available at present but that it is not a direct result of the increase in venous pressure.

Dr. F. R. Schemm, Great Falls, Mont.: It is good to think that, in spite of conflicting theories about edema, it is possible in edematous patients to overwhelm the effects of a high venous pressure, a low serum protein or an impaired renal excretion of sodium by a relatively simple clinical manipulation of ingested sodium, acid and water and to clear edema and prevent its recurrence more satisfactorily than in the past. This manipulation, which is achieved by the use of a low sodium, neutral or acid ash diet and a liberal fluid intake, seems essential to the clearing of edema in many cases that have not responded to the use of digitalis, mercury, heavy acidification or sharp salt restriction, alone or in combination. Dr. Wheeler reports such results in some of the 35 ambulatory patients whose edema had resisted the customary treatment in Dr. White's service. These patients were given a diet which was no lower in sodium than ours and which yielded the same excess of acid ash, and they received a fluid intake which, while not as high as we often use, was nevertheless from two to three times as great as they were in the habit of using; yet they appear to ascribe their results chiefly to sodium restriction, as did the French investigators fifty years ago. I suspect that the importance of a higher fluid intake in some cases and of the acid ash excess of the diet in others in clearing edema which would not otherwise respond becomes clearly apparent only in a relatively large series of cases of very ill hospitalized patients. Thus, in some 400 observations reported in 1942, and in a similar number not yet reported, I have encountered only 6 per cent that I regarded as perfect controls, whose edema resisted the sharpest sodium restriction and a good excess of acid ash in the diet but cleared promptly when the intake was increased to 5 or 6 liters daily. Similarly, I encountered only 5 per cent of real controls to demonstrate in the same manner the individual importance of the acid ash excess of the diet. My chief difficulties and most dismal failures were not usually encountered in cases of rheumatic heart disease but in cases of advanced degenerative heart disease with a complicating fever or in cases with a nephrotic syndrome; that is, cases in which the vapor loss or renal insufficiency appeared to demand (according to water balance principles) more water than I was able to provide.

Dr. George Burch, New Orleans: The difference between turnover of sodium in normal persons and in those with congestive heart failure is quite remarkable. It is impossible for me to agree that edema develops in patients with congestive heart failure solely because there are differences in the amount of blood that circulates through the kidneys. It must be concerned with more factors than that one. As far as venous pressure is concerned, there is a great deal of discordant relationship between venous pressure levels and the state of congestive heart failure. A patient with congestive heart failure frequently has normal venous pressure values. Patients with congestive heart failure will put out something like a hundredth as much sodium on the same regimen as the normal individual. The use of mercurial diuretics will change that output considerably. Apparently there is something concerned with kidney function and the maintenance of the sodium, a function residing in the tubules, that is of considerable importance in congestive failure. Whether the initiating factor is a change in venous pressure which interferes with kidney function or is a factor due to some hormonal function working indirectly, perhaps, is not known. Certainly congestive heart failure is not a simple process. It is quite complicated, and I would hesitate at this moment to try to settle on one theory or single factor. One can entertain some interesting theories, but the facts are not available to support one or the other. I certainly agree with every one that the restriction of salt is exceedingly important in the management of these patients.

Dr. Frederick M. Allen, New York: This late duplication of my results in heart failure (*J. Metabolic Research* **2**:429, 1922) from Boston, the former opposition stronghold, ignores my original introduction (1920) of the first adequately salt-free diet for hypertension, its adoption by Volhard through two graduate students whom he sent to spend a year in the Physiatric Institute in 1923, the unanimous condemnation in editorials (Salt Intake and Vascular Hypertension, editorial, The Journal, Sept. 29, 1923, p. 1116; The Salt Free Regimen and Vascular Hypertension, ibid., Nov. 16, 1929, p. 1561), in symposiums of the New York Academy of Medicine, and in every review and book by every reputed authority in this country; the recent complete confirmations of my clinical results and animal experiments (*J. Urology* **47**:751, 1942), whereby my small book published in 1925 stands today as the best up-to-date manual of hypertension treatment. The following points were included in a more adequate presentation before the Section on Urology of the American Medical Association on June 11, 1942: 1. During the twenty-five years when I was standing alone against all the professors in all the medical schools of this country, I insisted that the issue was strictly one of accuracy of clinical observation. The final decision should note this point and also my demand (*J. M. Soc. New Jersey* **27**:126, 1930) for a retraction of editorial misstatements. 2. Up to twenty years ago I employed a classification (adopted lately by Kempner and Grollman-Williams-Harrison) of patients refractory to salt-free diet; but my larger subsequent experience offers hope that many such patients under persistent treatment can show more or less improvement instead of the anticipated worsening. 3. The difference between the ease of preventing and the impossibility of curing diabetic gangrene illustrates the principal reason for condemning the authorities and schools for their record of neglecting or mismanaging hypertension throughout its most hopeful early stages, and then after hopeless organic damage has occurred seeking a miracle by medical nostrums or surgical malpractice. The concept (*J. Indiana State M. A.* **18**:445, 1925) that salt-free diet specifically arrests the progressiveness of hypertension signifies that proper early diagnosis and treatment eliminates the candidates for future congestive heart failure, angina, apoplexy and uremia, thus furnishing a rational therapeutic solution of the enormous hypertension problem. Completion of this research would by now have furnished several hundred cases studied for periods up to twenty-five years, to settle this vital point decisively. The oligarchic suppression stands responsible for twenty-five years of unchecked hypertensive disease, which caused more mortality and disability than the World War and altered the course of history through the demise of several presidents and many other leading personalities.

Note.—The discussion by Dr. Allen was submitted to Dr. White and Dr. Arthur Grollman, who comment as follows:

Dr. Paul D. White, Boston: It is a pleasure to acknowledge the observations made years ago by Dr. Allen that salt restriction in the diet of individuals with cardiac weakness and failure (among his hypertensives) was helpful in the control of edema when digitalis alone had not sufficed or indeed even in the absence of digitalis therapy (although digitalis should certainly be prescribed for patients with myocardial failure). We have, however, already expressed appreciation of the still earlier work (by twenty years) of Widal and Lemierre, who demonstrated very clearly back in 1903 that a low salt intake could clear edema without restriction of fluids. I suppose that one of the reasons why these observations of Dr. Allen's did not attract more attention was that the salt restriction was particularly aimed at hypertension. It is of considerable interest that there is now renewed interest in the dietary treatment, including low salt intake, in hypertension. These revivals of interest remind me of the interesting historical development of the general recognition of chronic constrictive pericarditis. Pick in 1896 described pericarditic pseudocirrhosis of the liver due to chronic constrictive pericarditis, following which his name was attached to the condition without the realization that the disease itself and the cause thereof were well described by Chevers of Guy's Hospital in London over fifty years before, that is, in 1842 and were again called attention to quite clearly by Sir Samuel Wilks in 1870. It is too bad that advances in medicine limp along so slowly. A practical result of an interest in medical history might help to prevent such retardation.

Dr. Arthur Grollman, Dallas, Texas: The value of Dr. Allen's comments, although in general true, are detracted from by his vindictive attitude toward those who have failed to accept his conclusions. Ambard at the beginning of this century was actually the first to suggest a low salt diet for hypertension. Dr. Allen's advocacy in 1920 of this procedure was not generally accepted by the profession because of his failure to give a rational or scientific explanation of his claims and his failure to point out certain requirements for applying salt restriction and the limitations of this procedure. Consequently, subsequent workers failed to confirm or adopt his suggestions, not through any malice toward Dr. Allen, as he assumes, but for the reasons cited. The statements in section 3 of Dr. Allen's comments are open, I feel, to the criticism that they represent only his claim and require much more work before meriting general acceptance as proved fact. It is theoretically conceivable that salt restriction, if applied early and continuously, might by reducing the blood pressure prevent certain of the secondary results of this disorder. However, there is no basis for the belief that it is more than a symptomatic procedure and that it will alter the course of the fundamental defect in hypertension any more than it affects the blood pressure in advanced stages of the disorder.

A Joint Enterprise.—*Medicine and nursing are one art, its* aim the care of the patient. If medicine goes on growing, as it must, while nursing is suffering a decline, the achievements of one will be offset by the failures of the other. However sure the diagnosis, neat the operation or apt the drug, the patient dies or suffers if he is badly nursed. Doctors have thus toward the nursing profession a duty of which nowadays they seem hardly aware. In the early days of modern nursing the nurse looked to the doctor for advice and help in developing her specialty, and the results of that collaboration have been an example to the world. Indeed, many of the principles laid down in that atmosphere of confidence and endeavor have stood the test of a century of nursing practice. . . . We believe that the medical profession must take a full and responsible share in restoring nursing to the position in which Florence Nightingale placed it: as an absorbing and stretching career for women with brains as well as satisfying occupation for women who, though not academic, are physically and emotionally apt for the care of the sick. And we think that an important step in this reablement might be achieved by the founding of an experimental school of nursing in which new departures in the curriculum, as well as in the conditions of the nurse's life, might be given a fair trial. A large training hospital might offer the best opportunities for this venture.—*Lancet* **2**:605 (Oct. 26) 1946.

RETROGRADE INTUSSUSCEPTION

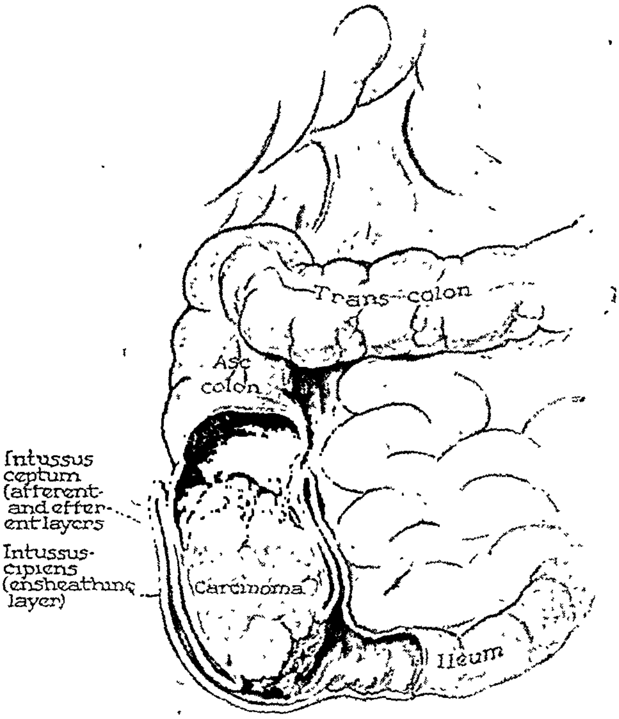
PHILIP THOREK, M.D.
and
W. S. LORIMER, JR., M.D.
Chicago

The clinical picture of an infant suffering the severe agonies of acute intussusception is almost as familiar to the senior medical student as it is to the experienced practitioner. Acute intussusception is the most commonly observed abdominal emergency in children under 2 years of age. Usually swollen Peyer's patches, gastroenteritis, Meckel's diverticulum or a faulty diet cause one part of the intestinal tract to invaginate into an adjoining portion. The mechanics of this process are not difficult to understand, since we know that the presence of material within the lumen of the normal intestine stimulates peristalsis, be it edematous mucosa, succus entericus, a tumor mass or a filled balloon. The hyperperistalsis thus stimulated forces the contents onward, and if the contents consist of a portion of the wall of the intestine, isoperistaltic intussusception results. If by vigorous peristalsis the intestine is unable to pass its contents distally, it reverses its direction, and the contents are forced in the opposite direction. This protective phenomenon occurs when a portion of the gastrointestinal tract is overstimulated by chemical irritation, inflammation, mechanical obstruction or neuropathologic states, both central and peripheral. According to Alvarez's[1] metabolic gradient theory, the fundamental factor which determines the polarity of intestinal peristalsis is the metabolic activity of the intestinal muscle. The normal metabolic rate progressively diminishes distally from the duodenum along the intestinal tract to the rectum. Thus in the presence of inflammation in one portion of the intestinal tract, the metabolic rate of this portion increases and when it exceeds that of a more proximal portion, it becomes the center of polarity. This process is comparable to the irritable focus sometimes found in the diseased myocardium which affects its rhythm.

Antiperistalsis can be as efficient in ridding the intestine of its contents as normal peristalsis, and, like the normal, its force increases progressively as long as the etiologic factor is present or until the intestine becomes exhausted. Antiperistalsis occurs in all portions of the gastrointestinal tract. It occurs in the normal process of digestion in the duodenum below the cap and also for a variable distance above the ileocecal valve to check the rapid passage of ileal contents into the cecum. By full appreciation of efficient antiperistalsis we can understand how intussusception in reverse, or retrograde intussusception, may occur.

In the classic type of intussusception the invaginated loop consists of two layers, an afferent and an efferent, these two forming the intussusceptum. The distal loop forms a single ensheathing layer and is called the intussuscipiens. *In our case of retrograde intussusception,* however, the afferent layer consisted of large bowel and the efferent, of small bowel; the two layers formed the intussusceptum. The ensheathing layer, or intussuscipiens, consisted of small bowel (see the accompanying illustration).

An accepted anatomic classification of intussusception is as follows: (1) *enteric,* in which small intestine invaginates a portion of itself; (2) colic, in which a portion of the large bowel intussuscepts into a more distal portion, and (3) enterocolic, in which small intestine telescopes into cecum and colon. According to Maingot[2] the enterocolic type accounts for approximately 85 per cent of all cases of intussusception. This is clearly understandable when one considers the relatively small diameter and mobility of the ileum compared to the larger and more stable cecum and ascending colon. We wish to add to this classification: (4) retrograde intussusception, in which any of the foregoing may be reversed. Groper[3] has suggested a classification for retrograde intussusception as follows: (1) *jejunogastric,* the jejunum prolapsing through a gastrojejunostomy stoma; (2) enteric; (3) ceco-ileal, the cecum prolapsing into the terminal ileum, and (4) colic, any portion of the large bowel invaginating a more proximal part.


Trans-colon
Asc colon
Intussusceptum (afferent and efferent layers)
Intussuscipiens (ensheathing layer)
Carcinoma
Ileum

Retrograde intussusception caused by an adenocarcinoma of the cecum. The afferent layer consists of large bowel and the efferent of small bowel. The ensheathing layer is made up of small bowel.

REPORT OF A CASE

C. G., a Negro woman aged 59, entered Cook County Hospital Sept. 1, 1945, the second time in two months, complaining of diffuse abdominal pains.

On previous entry in July, 1945, roentgenologic examination revealed distention of the small bowel, and a qualitative Benedict's test revealed sugar in the urine. The patient responded to duodenal decompression and the ingestion of a basic diabetic diet; ten days later she was discharged asymptomatic.

Symptoms recurred shortly after her return home, however. Typical attacks consisted of diffuse, intermittent colic occurring every twenty-five to thirty minutes, lasting about five minutes; it began slowly, reached a peak of intensity and then slowly

---

From the Cook County Hospital Surgical Service of Dr. Max Thorek.

[1] Alvarez: Gradient Theory, in Best, C. H., and Taylor, N. B.: The Physiological Basis of Medical Practice, Baltimore, Williams, Wood & Company, 1939, pp. 807-808.

[2] Maingot, R.: Abdominal Operations, New York, D. Appleton Century Company, Inc., 1940, vol. 11, p. 1118.

[3] Groper, M. J.: Ann. Surg. **112:** 344 (Sept.) 1940.

subsided. The pains were accompanied with anorexia, nausea and constipation. After a day and night of these symptoms, she noted abdominal distention and frequent copious vomiting which continued for from eight to ten hours. A watery, profuse diarrhea followed the vomiting, and the patient was then completely free of symptoms, only to have a recurrence of this syndrome three or four days later.

These episodes had been present for five months, and since their onset the patient's weight had dropped from 165 to 135 pounds (75 to 61 Kg.).

Persistence of these symptoms prompted her to reenter the hospital Sept. 1, 1945, six weeks after her previous discharge. At this time she was having a typical episode of diffuse pains, distention, feculent vomiting and obstipation. A review of the system for symptoms and past and family history were noncontributory. She did not have a history compatible with a previous intraperitoneal inflammatory condition or previous operation.

Physical examination at this time revealed a dehydrated, well preserved Negro woman, completely relaxed between apparently severe episodes of abdominal cramping. The temperature was 99.8 F. per rectum; the pulse rate was 90; the respiratory rate was 20 and the blood pressure was 108 systolic and 80 diastolic. On abdominal examination, inspection did not reveal scars or external hernias. Diffuse distention above the xiphopubic plane was present, and visible and audible peristalsis was observed in the hypogastrium concomitant with the painful seizures. Rigidity was not present, and there was a minimal amount of tenderness on deep palpation in the right paraumbilical region. Masses or organs were not palpated. Peristaltic sounds occurred about one each minute as high-pitched tinkles, replaced every ten to fifteen minutes by loud rushes. The rectum was empty, and masses were not palpable. Pelvic examination revealed a small, freely movable uterus without evidence of previous pelvic inflammatory disease. The red blood cell count was 2.98 million, the hemoglobin 58 per cent and the white blood cell count 13,400. Urinalysis was normal except for a trace of sugar. A scout film of the abdomen revealed distention of the small bowel without gas in the colon. The patient took and expelled a diagnostic enema of 2 quarts of tap water. The report on the barium enema revealed "complete and rapid filling of the entire colon with no evidence of filling defects seen." The total protein determination was 6.0 Gm. per hundred cubic centimeters. The carbon dioxide combining power was 56 per cent (the normal, 50 to 70 per cent). The blood sugar was 180 mg. per hundred cubic centimeters. Duodenal suction decompression resulted in complete relief of the patient's symptoms within twenty-four hours, and she passed large amounts of watery, brown stool, which tested 4 plus to benzidene for blood. Suction was discontinued, and a few days later the patient was given a half-cup of a thin mixture of barium by mouth. The stomach and duodenum were normal. In six hours the barium had filled a greatly dilated loop of the small bowel in the lower left quadrant.

The patient was adequately prepared within two weeks for abdominal laparotomy. Through a left pararectus incision, a mass the size of an orange was found in the right lower quadrant. This mass was between the distal end of a dilated hypertrophied loop of ileum and the proximal end of the transverse colon. The terminal ileum into which this cecal mass had invaginated was shaped much like a bell. The cecum, appendix and ascending colon could not be identified as such. A right hemicolectomy after the Lahey modification of the Mikulicz operation was performed. The patient made an uneventful recovery. The spur was successfully crushed with a Wertheim clamp two weeks postoperatively, and the colostomy was closed two months later. The patient is asymptomatic and has gained 10 pounds (4.5 Kg.) since her operation. She states that she feels better than she has felt in several years.

The diameter of the terminal ileum was one and a half times that of the transverse colon, and the wall of the ileum was hypertrophied and thicker than any portion of the large bowel. On opening the specimen one could see a proliferating tumor infiltrating indurated mucosal folds and fixing them into one contiguous mass. There was a small lumen comparable to that seen in the recanalization of a vascular thrombus. A probe could be passed through this lumen. The pathologist reported an adenocarcinoma of the cecum.

COMMENT

Pathologic Physiology.—In this case the reverse of the relatively common enterocolic intussusception occurred. The smaller cecum and ascending colon invaginated into the larger ileum. Just as the normal difference in the diameters of the ileum and the cecum is a predisposing factor in the enterocolic intussusception, the reverse of this anatomic relationship was a predisposing factor when the cecum invaginated into the ileum as in the case here described. The proliferating adenocarcinoma was the etiologic factor, and the pathologically dilated ileum and collapsed colon served as predisposing causes. The hypertrophied terminal ileum at the site of the inflammatory mechanical obstruction assumed the polarity of peristalsis, and a forceful antiperistalsis occurred. The tumor mass obstructed the cecum and ileocecal valve, and by contiguity the appendix and ascending colon were included in the mass. This entire segment was then caught in the forceful antiperistaltic waves of the dilated hypertrophied terminal ileum, and retrograde intussusception was the result.

Goodyear [4] reported a case similar to this with retrograde intussusception of the cecum into the terminal ileum.

Enteric.—Catz [5] described a case in his practice in which diagnosis was difficult because of the good general condition of the child (4 years old) who had suffered only slight pain, had vomited infrequently and had not passed blood per rectum. Palpation in the lower umbilical region revealed a mobile mass. Operation was delayed for the removal of an enormous fecal mass by oil lavage. However, the pulse rate had risen from 90 to 120, and a laparotomy was performed. A tense black mass was found which on examination proved to be a loop of small intestine about 20 cm. long, curving on itself and forming a closed circle, as it were, attached to a pedicle. At the narrow pedicle the loop was twisted. In the course of detorsion a slightly distended loop of small intestine about 50 cm. proximal to the cecum turned back sharply at a point where torsion was applied and lost itself in the portion of small intestine immediately above. The sheath was manifestly gangrenous. The loop was resected, and end to end anastomosis was in progress when the child vomited a flood of black liquid, which partially asphyxiated it. Death followed eight hours after the operation.

Cioffi [6] reported a retrograde intussusception involving the small intestine due to a Meckel's diverticulum. Caminiti [7] reported one due to an angioadenoma, and Buckley's [8] operation on a child 2 years of age showed a superimposition of a retrograde intussusception on an isoperistaltic one of the small intestine. Groper [3] described a case in which a retrograde intussusception of the ileum into the ileum and jejunum was complicated by volvulus at the site of the intussusception. Neither could be reduced because of the extensive edema of bowel and mesentery, and resection was necessary. Seven and one-half feet (228.6 cm.) of jejunum and ileum were resected, and a side to side anastomosis was performed. The patient made an uneventful recovery. The similarity of this case to that of Catz's is noteworthy. Mitchell's[9] patient made an uneventful recovery after a lateral anastomosis following resection of a gangrenous, retrograde intussusception involving about a foot (33 cm.) of terminal ileum.

---

[4] Goodyear, E. S.: New York State J. Med. **38**: 1397 (Nov. 1) 1938.

[5] Catz, A.: Rev. de chir. **47**: 213, 1913.

[6] Cioffi, A.: Riforma med. **50**: 612 (April 21) 1934.

[7] Caminiti, R.: Policlinico (sez. chir.) **42**: 261 (May) 1935.

[8] Buckley, J. P.: Brit. M. J. **2**: 665 (Nov. 22) 1919.

Colocolic.—Balfour[10] actually had an opportunity to observe the mechanism of retrograde intussusception at the operating table. In an operation for obstruction due to a tumor of the sigmoid he saw that there was a retrograde intussusception of the sigmoid into the descending colon. He reduced it, but as he was watching the area strong antiperistaltic activity set in, and it invaginated itself again.

Flemming[11] successfully operated on an intussusception of the descending colon into the transverse colon. The etiologic factor in his case was a benign tumor. Lewis[12] and Schoenfeld[13] have also reported cases of retrograde colocolic intussusception.

Multiple.—As mentioned previously in Buckley's[8] case, superimposition of retrograde intussusception on a direct one may occur. Catz[5] listed a number of cases of primary intussusceptions; cases in which progressive and retrograde intussusception occur on two separate intestinal loops, and cases in which two invaginations meet head on. In a case observed by Sainet,[14] the descending invagination telescoped the retrograde intussusception. In one observed by Knaggs,[15] the telescoping was the reverse. Moutard-Martin[16] noted a retrograde intussusception of the descending and transverse colon into the cecum; the whole mass so formed penetrated the descending colon, pulling a part of the small intestine with it. D'Arcy Powers[17] reported an identical case.

Jejunogastric.—Groper,[3] McNamara,[18] Shackman,[19] Chamberlin[20] and many others have reported retrograde intussusceptions of the jejunum through the gastrojejunostomy stoma. However, it seems likely that this process is not explainable on the same basis as are the enteric ceco-ileal and colocolic varieties. In all but the gastrojejunal type vigorous antiperistalsis is a necessary factor and as a general rule occurs in the presence of an intrinsic tumor mass which has caused an obstruction, either complete or partial. It is usually aided by decided differences in the diameters of the adjoining segments of bowel involved as was noted in our case.

CONCLUSION

An unusual condition of retrograde intussusception (large bowel into small) resulted from a chronic intestinal obstruction of the terminal ileum which was produced by a carcinoma of the cecum.

---

9. Mitchell, A.: Brit. J. Surg. **24:** 191 (July) 1936.
10. Balfour, D. C.: Ann. Surg. **68:** 588 (Dec.) 1918.
11. Flemming, C.: Lancet **2:** 1136 (Nov. 13) 1937.
12. Lewis, E. E.: Brit. J. Surg. **23:** 683 (Jan.) 1936.
13. Schoenfeld, H. H.: Virginia M. Monthly **58:** 242 (July) 1931.
14. Sainet: Bull. Soc. anat. de Paris **25:** 314, 1850.
15. Knaggs, R. L.: Lancet **2:** 1573 (Dec. 1) 1900.
16. Moutard-Martin, R., in Scarpa, A.: Traité pratique des hernies, Paris, Gabon, 1812, supp.
17. Powers, D'A.: Some Points in the Minute Anatomy of Intussusception, London, Y. J. Pentland, 1897.
18. McNamara, W. L.: Ann. Surg. **120:** 207 (Aug.) 1944.
19. Shackman, R.: Brit. J. Surg. **27:** 475 (Jan.) 1940.
20. Chamberlin, G. W.: Am. J. Surg. **49:** 510 (Sept.) 1940.

Special Articles

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association
and Hygeia, the Health Magazine
CHICAGO

(Continued from page 1070)

(Note.—*Following is the ninth chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of The Journal. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in The Journal. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—Ed.)

CHAPTER 9. *Medical Progress*

The years from 1859 to 1863 provided a short but significant list of steps in permanent medical advancement in the United States and in the world as a whole. The discovery by Pasteur of anaerobic bacteria, the mapping by Broca of the speech center in the brain, Raynaud's description of symmetric gangrene and Pasteur's detection of silk worm disease were first steps toward a sudden flowering of medical knowledge. There was no single great discovery, like anesthesia, to seize the imagination of all the world. The Civil War, which swept the United States from 1861 to 1865, was a damper on research.

The year 1865 saw the publication of Mendel's memoir on plants. In 1866 Voit established the first hygienic laboratory in Munich and Graefe described sympathetic ophthalmia. The first International Medical Congress was held at Paris in 1867 and the *American Journal of Obstetrics* was founded in the United States in 1869.

Indeed all the years up to 1876 were years of slow progress. J. Marion Sims had published his notes on uterine surgery; Esmarch introduced his first-aid bandage. There were more studies on localization of areas in the brain. Laryngology began to be demarcated as a specialty, and a laryngologic society was established in New York. As early as 1874, Paul Ehrlich introduced dried blood serums and introduced staining methods for blood cells and other tissues of the body. The name of Weir Mitchell did not appear among those interested in the American Medical Association but he had introduced his rest cure in 1875. Great Britain passed a public health act and the English Food Adulteration act in the same year, which marked also the founding of the Boston Medical Library. In fact, the year which marked the centennial of freedom in the United States also saw the founding of Johns Hopkins University and the introduction of the telephone. What would medical practice be like today without the telephone?

THE POSTWAR YEARS—1865-1869

1865

BOSTON

The meeting of 1865 resulted in the introduction and adoption of a resolution which has had a profound effect on the quality of medical literature in the United States. Each year since then it has been sent to every physician who obtains a place on the program of the Annual Session of the American Medical Association. The resolution is a guide to the executive committees of the individual Sections of the Association in recommending papers to the Editor of THE JOURNAL. The resolution, introduced by Dr. Robert Burns, reads:

> "*Resolved,* That the several Sections of this Association be requested, in the future, to refer no papers or reports to the Committee of Publication, except such as can be fairly classed under one of the three following heads, viz: 1st. Such as may contain and establish *positively* new facts, modes of practice, or principles of real value. 2d. Such as may contain the results of well-devised original, experimental researches. 3d. Such as present so complete a review of the facts on any particular subject as to enable the writer to deduce therefrom legitimate conclusions of importance.
>
> "*Resolved,* That the several Sections be requested, in the future, to refer all such papers as may be presented to them for examination by this Association, that contain matter of more or less value, and yet cannot be fairly ranked under either of the heads mentioned in the foregoing resolution, back to their authors with the recommendation that they be published in such regular medical periodicals as said authors may select, with the privilege of placing at the head of such papers, 'Read to the Section of the American Medical Association on the day of 18 .'"

The Association had become active in establishing ethical considerations, particularly as related to advertising and promotion of individual physicians in the public press. Several physicians had been dropped from their local medical societies. The House of Delegates of the American Medical Association had confirmed their expulsion. At a previous session a resolution was introduced affecting Dr. Montrose A. Pallen. It was alleged that he had imperiled the lives of thousands of people in the city of New York by participating in a plot to poison the Croton reservoir by which the city is supplied with drinking water. The action followed the report of a military committee in Washington. Now a distinguished group, including more than thirty-five of the leading physicians of America, protested the previous action and asserted that the guilt of Dr. Pallen had never been established. The resolution was referred to a committee, which pointed out that this was the first time that a group before the Association had protested an action of the majority. They suggested that the evidence indicated that Dr. Montrose A. Pallen had left St. Louis early in the war in the interests of the rebellion and that the testimony pointed toward his complicity in the attempt to poison the water in the Croton reservoir. After this report was read, a telegram came from Dr. Pallen charging that the man who had testified against him had been proved the perpetrator of an infamous perjury. With this confusion of data before the meeting, the resolution was *laid on* the table. The following year when the committee to which the matter had been referred found that the statements on which his expulsion was based were entirely unfounded, Dr. Pallen was restored to membership. He expressed himself highly gratified by the action of the Association and thanked the members.

PRESIDENTIAL ADDRESS OF NATHAN SMITH DAVIS

Notable among the presidential addresses that had been delivered to the American Medical Association was the address by Nathan Smith Davis in 1865. He expressed the congratulations of all on the fact that the United States were again united. "The climax of human wickedness," he said, "had been reached" in the murder of the Chief Magistrate. The year had witnessed the death, too, of Drs. Jonathan Knight of New Haven, Conn., and Valentine Mott of New York.

Twenty years had passed since the first call for the formation of the American Medical Association. Dr. Davis was greatly disappointed that the meetings were now so taken up with events that proper consideration was not being given to some of the most significant interests. He said, "Whenever medical education became the theme of discussion, those more interested in the reading and discussion of papers and reports of a direct scientific and practical character were ever ready to restrict debate, refer the subject to committees or in some other way avoid what they regarded as a mere waste of time. On the other hand, if the reading of an elaborate scientific paper was commenced the author would seldom complete the first half dozen pages before the zealous advocate of educational reform would dispose of the whole subject by a motion to dispense with further reading and to refer the document directly to the Committee of Publication." The good natured lovers of good dinners and sight-seeing would always be ready to aid the other parties with their votes and to secure the acceptance of every invitation to an entertainment, an excursion or a public institution.

During the years all sorts of attempts had been made to control these difficulties by modifying the Constitution or the By-Laws. Standing committees had been abolished and committees on special subjects substituted. Papers requiring more than ten pages of manuscript were compelled to be presented in abstract, and the Committee on Arrangements had been instructed to check the evils of extravagant and costly entertainments by omitting all such from the program of arrangements.

None of these reforms had been satisfactory. "The attempt to eliminate from the program the entertainments," he said, "has resulted only in exchanging one magnificent public banquet occupying one evening for three or four private ones during the annual sessions of the Association." The Association was being criticized because its annual meetings partook more of the character of gourmandizing and sight-seeing than of grave, professional and scientific inquiry.

Nevertheless the Association had made great progress in its fundamental effort to improve medical education. Dr. Davis, therefore, proposed a plan relative to entertainments, which has been followed since that time by the American Medical Association. It is well to read the proposal in his own words:

> But the arrangements for that evening should be such as would permit the most free and cordial intercourse. A public hall should be provided in which gentlemen and ladies could mingle and promenade freely; where each could seek out his old friends and make the acquaintance of new ones; where wit, repartee, and, if need be, songs, sentiments, and speeches could be made to enliven the evening. A simple stand might be placed in some corner, where all who wished could obtain a dish of ice cream, strawberries or other fruit, and a cup of coffee. But there should be neither ostentatious show, nor rich viands, nor strong drinks, for the acknowledged guardians of the public health should not, especially in their highest representative capacity, themselves publicly violate the plainest laws of hygiene.

This farsighted man made other proposals which have been effective. He recommended that each Section be authorized to choose its own officers who should prevail for a year; that each Section adopt well considered rules to govern the reading, discussion and final disposition of all reports, papers and questions that came before it; he suggested that each Section be provided with either a skilful secretary or a professional reporter who would provide a summary of all discussions on scientific questions and papers. He pointed out that results can "never be accomplished by any amount, either of good *wishes* or *fault-finding;* but by prompt, persevering, disinterested action."

1866

BALTIMORE

The first distinguished guest to appear at the meeting of the American Medical Association attended the meeting in 1866 and gave an address. He was Dr. Brown-Séquard, founder of our science of endocrinology and renowned throughout the world for his magnificent contributions in this field.

This year was notable for the majority and minority reports of the Committee on Medical Ethics dealing with specialization. The majority report listed the advantages of specialization as including minuteness in observation, acuteness in study, wideness of observation, skill in diagnosis, multiplicity of invention and superior skill in manipulation. The disadvantages were a narrowness of view, a tendency to magnify unduly the diseases which the specialty covers, a tendency to undervalue the treatment of special diseases by general practitioners, some temptation to the employment of undue measures for gaining a popular reputation and a tendency to increased fees. The advantages far outweighed the disadvantages from the point of view of the patient and of the advancement of the specialty. The committee felt that these disadvantages could be overcome if the specialist would begin as a general practitioner and gradually grow into his specialty.

The committee was especially concerned with the means by which the specialist made himself known to the community. They felt that there should be no advertising either in newspapers or medical journals.

The minority report was signed by Dr. Henry J. Bowditch. He considered that the whole tendency of modern science was toward specialism but he felt also that the Association had no business passing on the question of the advertisements unless they were evidently of a mountebank character. It was his opinion that "any Association would be better occupied in the hearing of able papers and in discussions on all subjects connected with medicine than in any movements for the mere discipline of erring members."

When these reports had been presented to the delegates they were referred to the Committee on Publication, and a motion introduced by Dr. J. Solis-Cohen of Philadelphia which suggested that these be a special order of business at the meeting in 1867 was adopted.

1867

CINCINNATI

Although N. S. Davis had remonstrated against entertainments on too lavish a scale in 1866, the convention which met in Cincinnati in 1867 had a mighty good time. The program lists a half dozen private receptions, a public reception by the physicians of Cincinnati, a steamboat excursion at the expense of the City Council, an exhibition of steam fire engines by the chief of the Fire Department, a little reception for the delegates on the closing day by the proprietors of Longworth's Wine House and an excursion to the Longview Lunatic Asylum.

There were the usual resolutions on the advancement of medical education and on the rank of medical men in the Army and Navy, with the conclusion that a committee should see the President of the United States and the Secretary of the Navy to urge adoption of the changes recommended.

Dr. Allen March of Cincinnati had been able to collect photographs of all the Presidents of the Association and it was moved that they be consigned to the archives.

As a result of action taken in a previous meeting, the delegates from the medical colleges of the country had been assembled in Cincinnati and had adopted certain principles of standardization which the American Medical Association now approved. The Association of American Medical Colleges and the Council on Medical Education now cooperate closely in maintaining standards. Again the American Medical Association urged the states to set up licensure for physicians, but a resolution asking members of the medical profession not to patronize druggists who manufactured nostrums was rejected.

At this early date there were already medical politicos who thought a great deal would be gained in the way of prestige for the American Medical Association if it could only have close contact with Washington. Indeed this argument convinced even N. S. Davis, so he offered a resolution suggesting that the next Annual Session of the American Medical Association be held in the city of Washington and that it be held there every second year thereafter. Still on the somewhat teetotalitarian and puritanic side, his resolution also suggested that whenever the Association met in Washington the Committee on Arrangements be strictly forbidden either to provide themselves or accept provision by others of any entertainment or excursion whatever. With due caution the convention amended this resolution, adopting it except that the meeting should be held in Washington until otherwise ordered and that entertainments or excursions were forbidden if they conflicted with the regular business of the body or its sections.

From Pennsylvania came a resolution urging the members of the faculty of the University of Pennsylvania and the Jefferson Medical College to join their county medical societies and participate with the rest of the medical profession in the work of the American Medical Association.

Dr. G. C. Cox, who had attended a meeting of the British Medical Association as the first delegate from the American Medical Association, indicated that he had been most graciously received by our British colleagues.

1868

WASHINGTON, D. C.

The meeting in Washington, D. C., was marked by visits to the President, the Chief Justice, the Speaker of the House of Representatives, the Army Medical Museum and the Mayor of Washington—each of whom gave receptions for the delegates. Furthermore, on Thursday night, May 7, the Capitol was lighted and the dome illuminated from 8 until 9 p. m. These multitudinous political receptions apparently minimized other features of the convention, for the volume of *Transactions* of that year is the slimmest of its generation.

The Committee on Medical Ethics had a report signed by Dr. H. I. Bowditch alone. The *Transactions* state simply:

> Dr. Bowditch had become chairman by the death of two of his colleagues. He had been unable to elicit any replies from his two other colleagues, and therefore was compelled to act in his individual capacity.

For the first time the bitter and burning question of women doctors came to the fore. Dr. Bowditch strongly advocated the recognition of regularly educated and otherwise well qualified female physicians. This resolution was made a special order of business.

As the meeting was in Washington, Senator Drake of Missouri, who visited the convention, was invited to a seat on the platform and entertained the Association with some remarks in allusion to his connection with the medical art through his father, the late Prof. Daniel Drake.

When the resolution on women doctors came to consideration, it was discussed at some length and then consideration was indefinitely postponed.

As evidence that the bitter feelings of the war had been dissipated, the Association elected as President Dr. William O. Baldwin of Alabama, who made a beautiful address in behalf of the Southern physicians. Among his concluding paragraphs was the following inspiring statement:

> For myself, and for those whom I represent, I grasp with unaffected pleasure the hand which you have so gracefully and magnanimously offered, and I hope and believe this sentiment will meet a ready response from all our brethren of the South. *Let us again be united as friends and brothers.* Ignoring past and present political differences, let us exhibit to this distracted country an example of forgiveness and toleration worthy of the emulation of a great and noble people. Let the bonds which we acknowledge here bind us in all portions of this broad land as a sacred brotherhood, engaged in a common toil, with one mind, one heart, and one purpose. Let the place annually selected for our meetings be our Mecca. There let us meet with harmony of sentiment for thorough organization, for connected and concerted action, without which no great science or art can ever attain its highest perfection. Exacting from each other only the qualifications necessary for honorable membership, let us there mingle in the sacred precincts of our humane profession, and join hands and sympathies in the strengthening influences of association and fellowship; and as we lay fresh offerings in the temple of a noble science, and build new fires on her altars, let us cherish in our hearts the ennobling sentiment of brotherly love.

Again at this meeting in Washington, the Association heard a word of praise from a President who was among the greatest of the leaders of American medicine in this country. Dr. Samuel D. Gross, who had been associated with teaching in medical schools in Louisville and in Philadelphia, urged particularly the establishment of suitable training for nurses. He said:

> I am not aware that the education of nurses has received any attention from this body; a circumstance the more surprising when we consider the great importance of the subject. It seems to me to be just as necessary to have well-trained, well-instructed nurses as to have intelligent and skilful physicians. I have long been of the opinion that there ought to be, in all the principal towns and cities of the Union, institutions for the education of men and women whose duty it is to take care of the sick, and to carry out the injunctions of the medical attendant. There is hardly one nurse, of either sex, in twenty who has a perfect appreciation of the requirements of the sick-room, or who is capable of affording the aid and comfort so necessary to a patient when oppressed by disease or injury. It does not matter what may be the skill of the medical practitioner, how assiduous or faithful he may be in the discharge of his functions, as a guardian of health and life, his efforts can be of comparatively little avail unless they are seconded by an intelligent and devoted nurse. We need in this country a million of Florence Nightingales, and at least half that number of John Howards, to aid our physicians in their strife with disease and death. Myriads of human beings perish annually, in the socalled civilized world, for the want of good nursing.

The committee which reported on the recommendations and suggestions contained in the President's address recommended the adoption of a resolution which would set forth the views of the President regarding the education of nurses and strongly recommended the establishment in all of our large cities of training schools for nurses.

1869

NEW ORLEANS

Still further demonstrating the desire for complete *rapprochement* with the Southern contingent, the convention of 1869 met in New Orleans, where they were warmly greeted by the full attendance of the Southern physicians.

At this time an Association of American Medical Editors was formed. The president, Dr. William O. Baldwin, struck a forlorn note as he viewed the accomplishments in relationship to medical education. He said:

> The plan of action you have adopted, that of endeavoring to induce forty or fifty medical colleges, with conflicting interests, to agree voluntarily upon a "uniform and elevated standard of requirements for the degree of M.D.," and adopt it in good faith, has become almost a Utopian idea, a forlorn hope. Though urged with all the force that truth could impart, and enforced with all the appealing earnestness that the gravity of the subject could inspire, yet your views and wishes have not impressed themselves on the schools to such an extent as to change their course of action. It seems to me that all hope of reform through this means must be abandoned. Nor can we expect to reach the end proposed by measures of State legislation. The obstacles here are too palpable to need enumeration. They are many, and they are unsurmountable. Almost any body of medical men may obtain a charter for a medical college in most of the States of this Union, with pretty much such regulations and privileges as they may agree upon among themselves and ask for.
>
> I despair, therefore, of seeing this Association attain its object through any of the agencies heretofore employed. If, however, this great work *ought* to be done, it *can* be done. I believe it is within the reach of the power of this Association. But I can see no mode by which it can be accomplished, except through FEDERAL LEGISLATION.

Perhaps the most significant statement made at the 1869 convention was that of Samuel D. Gross who had been the delegate to Great Britain. Here comes the first suggestion for a weekly medical journal owned by the Association as a necessary project for the advancement of medicine in our country and the promotion of the work of the Association.

Significant also was the continuing drive toward the prohibition of alcoholic liquors. The *Transactions* contain a report of almost 100 pages on the relations of alcohol to medicine, ending with an apology because the report is not longer. The report was made by a believer in teetotalism and provides such a horrible list of mental disturbances, crimes and other reactions resulting from too much participation in the "demon rum" as to have frightened any one other than the hardy citizens who heard it.

(To be continued)

THE DOCTOR REVIEWS HIS PORTFOLIO

WALTER J. J. SMITH
New York

(NOTE.—The investment mischief that doctors get into with a high degree of regularity seems to stem out of a violation of one or more of the investment fundamentals. The following article briefly reviews these fundamentals. It suggests one method to aid in surmounting these difficulties.—ED.)

Did the bull market end in May-June of 1946 or are the current low prices of securities merely excellent buying opportunities in a bull market that has not yet ended? What investment policy should the doctor adopt? Furthermore, what issue or issues should he buy? There are as many "expert" opinions on both sides of these questions as there are people to voice them, and their number is legion. But, irrespective of which side of this problem history will eventually prove to be right, there are certain things the doctor can do to put his financial house in sounder shape. All of them boil down to a question of examining his portfolio in the light of the degree to which investment fundamentals are being applied and then making the changes according to the findings.

It seems incredible that a man will spend a lifetime studying his profession in order to make a success of it and then, when he has reached his goal, take his life savings and "invest" them in various securities with no more study than he employs when purchasing a hat or a pair of shoes. Yet that seems to be the perennial experience of far too many of the doctors. Undoubtedly there are quite a few who today are looking at some brightly colored stock certificates in their vaults and trying to find out just why they were purchased. Was it for income or for speculation? To say that even a little research went into the issues before their purchase is to be charitable. To say that each and every issue was purchased by the doctor only with a view to its desirability in his entire portfolio and that the portfolio was properly balanced and geared to his specific investment requirements is to say that that doctor is a very unusual one. As a practical matter he is a definite minority, for such a person is the exception and not the rule whether he be doctor, plumber or banker. Is there any wonder then that he comes to financial grief with an alarmingly high degree of regularity?

Look at the problem in this manner. There are three fundamentals that must be observed if a better than average investment result is to be expected. The first one is selection, researched selection. Stated simply, it means that you should pick your securities only after careful study of all pertinent facts concerning each stock and bond, first as to fundamental value and then as to extent to which it meets your major investment objective of income or appreciation. If you are not trained to do it (and the chances are you are not) or you have no time to do it (and the chances are you haven't if you are a successful doctor) then by all means see that a thoroughly experienced security analyst, preferably a specialist in each of the industries involved, does it for you. Specifically, your investment dealer should have the necessary research facilities to do this job.

After you have done this, diversify your risk. There is no perfect investment. No one individual is infallible. No one person knows all the answers. You or your adviser might have forgotten some detail, small enough but important enough, to offset the advantages of the other good factors. New tax laws, products or competition might upset all your calculations. It has happened. Stated another way, don't put all your eggs in one basket, no matter how good the basket appears to be at the moment.

Finally, you should watch the baskets. If you can't do it yourself or don't feel qualified to do it, then by all means see that a competent investment counselor does it for you. As you probably know from your own experience, to "buy something good, put it away and forget about it" has been a highly dangerous and expensive policy to employ. In fact, that idea is just about as silly as the patient who takes a complete physical examination, gets his doctor's O. K. and then concludes he never has to take another trip to his doctor. The records are full of "good" securities that blew up in the investor's face under a policy such as that. Here is the basic reason for that experience. It must be realized that the individual purchases "risks," not securities, and these "risks" must be watched continuously. Some securities represent greater risks than others. For example, U. S. Government bonds have a smaller risk factor than corporate issues, but all are risks varying only in degree with the risk factor increasing down the quality scale from U. S. Governments.

There you have, briefly and simply, the principles of investment success. Violation of any one of these three fundamentals will be enough to give you a special invitation to a choice spot behind the financial "8 ball."

Perhaps you say "That sounds easy. But, if that is all that has to be done in order to have some assurance of a satisfactory investment experience, why do so many doctors come to grief?" Now that is a reasonable question. Fortunately it is not a difficult one to answer. Let us examine those fundamentals again in the light of practical application. To get "expert" suggestions for investment purchases is a simple matter. Investment houses and statistical services are forever compiling such lists and distributing them freely. Consequently the question of selection is less difficult to handle than the other two factors of diversification and supervision. Stated quite succinctly, the real answer to this problem in most cases is "insufficient money." Because of insufficient money it is impossible for the investor to secure the necessary diversification of risk. Simple arithmetic will show the reason. Just to buy 10 shares of each of the common stocks that comprise the Dow Jones Industrial Average would cost the investor (at recent levels) about $23,000 plus commissions. If he wanted to add a few high grade bonds for capital stability another $5,665 would be necessary even if he was to put into the list only one of five different bond issues. No analyst would seriously consider this addition of one bond each as adequate diversification, yet it would represent an additional commitment that an uncomfortably large number of persons could not afford on top of their original investment. If a higher "fixed" return was desired and a somewhat better security balance was required, about $5,175 more would be necessary in order to add about 10 shares each of five different good grade preferred issues in today's market. In other words, a minimum

---

The author has been in the investment field since 1928. He has been security analyst, investment counselor, financial writer and a member of the editorial staff of one of the oldest national and business investment magazines in the country. He is now associated with the National Securities & Research Corporation. He holds a Bachelor's Degree in Economics from New York University, and a Master's Degree in Investments from the Graduate School of Business Administration of New York University.

commitment of some $34,000 plus commissions would be necessary if today's investor wanted to buy a minimum "balanced" investment program. There is one point that should be clearly understood here. These statistics are easily presented, but long association with all kinds of investors prompts the thought that the money to buy the securities is not so easily got. There is no evidence that has come to my attention that would support the belief that the typical investment portfolio is as large as this amount or, more specifically, that the average doctor has much if any more than this "minimum" amount of money invested in the securities markets.

Therefore, aside from representing a sum of money far in excess of an amount the average investor would seem to have available even today in order to secure a minimum amount of diversification and also representing an average size "balanced" portfolio that may be on the liberal side for the doctor, another factor must be considered. This figure would represent a sum of money that competent investment counsel could not afford to place under continuous supervision at the present time except under certain specialized conditions. In other words, even this figure—considerably in excess of the amount that the average person has invested—does not enjoy the benefit of continuous supervision. The alternative to this problem is for the doctor to supervise the portfolio himself, a choice by no means pleasant, in general not feasible and most often not profitable.

Just how valid these conclusions are to a specific investor will of course depend on the particular case. In any given instance the problems of diversification and supervision may be more or less serious, depending on the actual sum of money involved. But, in general, with two of the three investment fundamentals standing excellent chances of being violated because of insufficient money, the average doctor appears to be gambling on Lady Luck to help him solve his investment problems. While she has smiled on many investors from time to time, that lady is notoriously fickle in her affections. Therefore it would not seem to be a very strong base on which to build an investment estate.

SPECIALTY MUTUAL INVESTMENT FUNDS

Is the doctor to conclude from this that he should not be "in the market" if his investable funds amount to only a few thousand dollars and he has neither the time to watch his portfolio nor the knowledge to supervise it even if he had the time? Not necessarily. Several methods have been developed (with varying degrees of success) to get around these difficulties. For example, over the past several years an increasing number of persons have been purchasing the shares of the mutual investment companies in an attempt to get "from under" these problems and thereby improve their chances of arriving at their specific investment goals. Some indication of the extent of the trend toward this end of the investment business might be noted from the fact that, as of a recent date, there were some $1½ billion in assets in these funds and approximately 500,000 shareholders were represented in seventy-three different companies. Sales in 1945 amounted to $292 million and for 1946 were running at a rate of better than $400 million.

The reasons for this recognition are not difficult to see. Portfolios of the "mutual" companies offer the investor a choice ranging from volatile, low priced common stocks to good grade bonds. Whatever the investment need of the individual (income or appreciation) there is a portfolio to fill it. As a matter of fact, choosing a mutual fund to suit one's investment requirements and objectives is as easy as picking an individual stock and, judging by experience of the past several years, a generally more satisfactory procedure. He can choose among investment companies that have different kinds of bond funds as well as companies that have different kinds of preferred stock and common stock funds and finally companies that have so-called balanced funds where the proportion of bonds, preferred stocks and common stocks shifts in accordance with the managements' opinion of the business and economic prospects. It is felt that this method of investing requires no detailed knowledge of individual securities on the part of the professional man and presumes no time in his working schedule to "supervise" them. Yet, at the same time, it sacrifices none of the highly important investment advantages of careful selection of stocks and bonds, proper diversification of issues and continuous supervision of them. On the contrary, it adds the skill of the professional (in the form of the particular fund's investment managers) to the supervision of each individual investment company portfolio and the safety factor of considerably wider diversification to most personal portfolios than would be possible or practicable by employing customary investing methods. *This is purely the mathematical result of cooperative investment action.*

The specialty mutual investment funds (wherein each fund is geared for a specific investment objective such as income or appreciation) represent an interesting modern development in the investment field. They are founded on the simple principle that a group of individuals by pooling their capital can obtain at relatively low cost the same investment advantages that large financial institutions and very wealthy investors enjoy. Additionally and because each fund is geared for a special investment purpose, it permits the doctor's investment estate to be designed and operated in accordance with his specific objectives, whether that objective be income, appreciation or a balance between them, whether his objective be capital conservation (through the use of bond funds) or capital appreciation (through the use of various common stock funds). It is only necessary to purchase the fund or funds that have the kind of securities in them to meet his objective, and this is a matter to be worked out by the doctor and his investment adviser. Because of its flexibility it permits an estate that can be built up or drawn down in part as personal circumstances dictate without in any way affecting the balance of the rest of the program. Quite clearly there are certain personal circumstances wherein bond funds (and only bond funds) are mandatory. On the other hand, there are other doctors so situated that more speculative positions can and should be adopted. Furthermore, there are clearly times in every bull market when logic calls for a major concentration of invested money in bonds and clearly times when the emphasis should be on common stocks. Because mutual investment shares can be liquidated on demand, the doctor can adjust his program in this manner. His investment portfolio (as represented by his holdings of mutual fund shares) can be moved quickly and conveniently from a defensive position (capital conservation using certain types of bond funds in uncertain market conditions) to an aggressive position (capital growth by using certain types of common stock funds in periods of rising stock prices) and back again, in accordance with the major swings of the business cycle. In this manner the investor is able to sidestep entirely the problem of what stock or bond to buy or sell. His only question is one of timing his purchases and sales in the class of securities to meet his objective. In fact, it is possible for all or a substantial percentage of the doctor's investment portfolio to be adjusted in this manner with a minimum of effort and worry on his part.

There are certain "detail" advantages also inherent in the use of these funds. Because of the "pooling" action of his investment through this medium, it affords a simplification of his tax and estate accounting with respect to his security holdings that cannot be surpassed by the average portfolio employing the usual methods of stock and bond buying. Furthermore, it represents an investing medium that is subject to close federal and state regulation. Finally, there is no penalty on the small buyer such as is represented by the "premium" paid on the purchase of an "odd lot" of securities on the large exchanges, nor is there discrimination in management fees between the large and the small investor.

Although the primary objective of the mutual fund management is to do better than most investors do for themselves whether their objective is income or appreciation, there is nothing mysterious about their methods. In order to do this job the investment managers of each fund rely on the rigid employment of the three fundamentals already referred to—selection, diversification and continuous supervision, the same factors the doctor must observe if he hopes to achieve better than average results in his own portfolio operations.

The life insurance industry has a very precise way of describing the result of a purchase of a life insurance policy. "At the stroke of a pen, you have created an estate and hired the people to manage your affairs." This action has its counterpart in the securities field. When he buys the shares of the mutual investment funds suggested by his investment adviser, the doctor creates what is in effect a personal investment account. By this simple action he has hired a bank trustee or custodian who is responsible to him for holding in safekeeping the securities purchased for his account. By the same token and without additional expense, he has hired accountants to keep his books and lawyers to see that his investment affairs are in proper shape. When he bought those shares he thereby employed experienced investment managers to handle his portfolio in exact accordance with his own investment requirements. In other words, he has employed these people to do for him the things he would have to do if he had research facilities and training as well as the time and inclination to do it himself. Finally, it should be remembered that he has hired these people to do this work for him as long as he retains his shares in these funds. He will continue to hold those shares—and thereby hire these people—only as long as the job they do is satisfactory to him.

120 Broadway, New York 5.

Clinical Notes, Suggestions and New Instruments

A NEW METHOD FOR FINGER TIP AMPUTATION

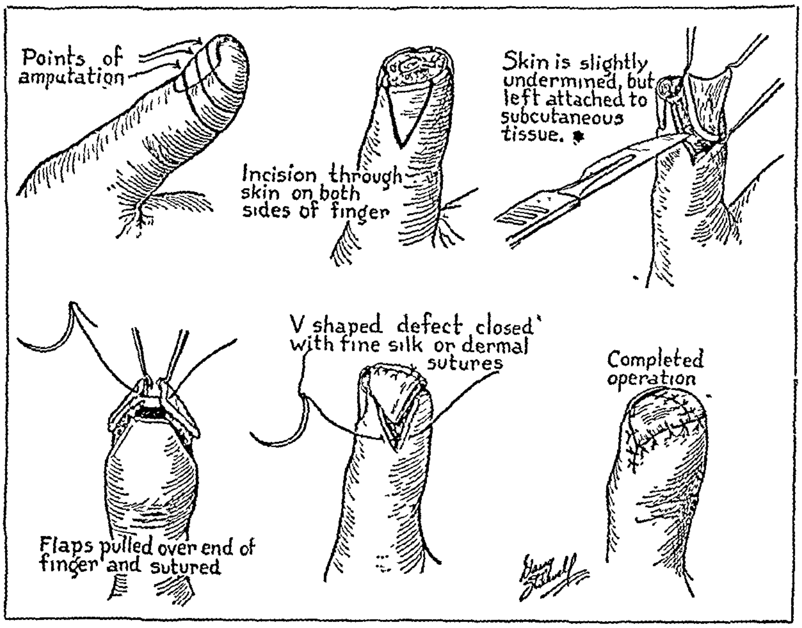
WILLIAM KUTLER, M.D.
Cleveland

A new technic for repair of finger amputation was first published in February 1944. Since that time many additional cases have come to my attention. As a result of this experience, several improvements have been effected.

INDICATIONS

Use of this technic is indicated:

1. For fingers or toes in which the tips are destroyed but the nail matrix is still intact or only slightly injured.
2. In any extremity where further shortening by a ventral flap technic is not desirable (*a*) because the function at that joint may be further decreased or (*b*) because the stump is already short for an appliance.


Points of amputation
Incision through skin on both sides of finger
Skin is slightly undermined, but left attached to subcutaneous tissue. *
Flaps pulled over end of finger and sutured
V shaped defect closed with fine silk or dermal sutures
Completed operation

Steps in new technic for repair of finger amputation. * Since this illustration was first published experience has shown that undermining is not necessary.

The technic which has given the best result is as follows: The end of the crushed finger or thumb is scrubbed thoroughly with soap and water and every particle of foreign matter is removed. All devitalized tissue is excised and the tip of the phalanx smoothed. Two triangular skin flaps are prepared, one on each side of the finger, by making a V-shaped incision on each lateral aspect with the apex pointing proximally and the base distally. It has been found that if the incision outlining the triangular flap is carried down through the subcutaneous tissue the skin flap will became loose enough to be pulled over the tip of the finger. Undermining of the skin flap is not only unnecessary but undesirable, because in some instances the blood supply is impaired and the skin flap sloughed. The flaps are drawn across the end of the finger and sutured together across the midline with fine interrupted silk or dermal sutures. The triangular flaps are further secured by several sutures around the circumference of the finger. Occasionally, it is necessary to place a suture at the dorsal aspect in order to hold the flap right up to the area where the nail will eventually come through. A large dressing is applied which is not disturbed for seven to nine days. Healing usually takes place without infection.

ADVANTAGES OVER THE OLDER METHOD

1. The end result is a smooth, rounded finger tip which is actually slightly lengthened without impairment of its function.

With the ventral flap method, the finger is shortened from ¾ to 1 inch (1.9 to 2.5 cm.), and there is considerable impairment in function.

2. The finger tip is not painful or tender. If the area is allowed to granulate, the result is frequently a deformed and extremely tender finger tip.

3. *The method is simple to carry out.* Although good results can be obtained with full thickness or pedicle grafts, the procedure is difficult and requires considerable time for complete healing; frequently, due to the sloughing of the grafts, the results with this older method are disappointing.

602 Rose Building.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

The Therapeutic Trials Committee, a standing committee of the Council on Pharmacy and Chemistry, has adopted the following report, and the Council has authorized publication of the report so that it may be widely disseminated to those who have a serious interest in medical research.

Austin Smith, M.D.,
Secretary of the Council.

Walton Van Winkle Jr., M.D.,
Secretary of the Committee.

THE COST OF CLINICAL RESEARCH

The medical profession and the public have come to recognize that the cost of research, particularly medical research, is enormous. The opinion is often expressed that in the case of medical research the principal cost arises from laboratory studies. It does not seem to be generally appreciated that clinical research, if properly performed, is often as expensive as laboratory investigations.

Unfortunately, clinical research has not, in many instances, received the financial support to which it is entitled. This lack of support has resulted in the performance of poorly controlled and ill conceived investigations the data from which do not advance the science of medicine, by reason of incompleteness and unreliability. Admittedly, merely increasing the size of the grants made for clinical investigations will not insure better results. However, adequate financial support will enable the competent investigator to do his best work.

In order to secure more adequate support of clinical research, all participants must develop an appreciation of the factors involved in the cost of such investigations. The group supplying the funds, such as universities, foundations, commercial concerns or private donors, must be prepared to make grants of sufficient size to cover both the direct and the indirect costs of the proposed investigation. The investigator must understand and estimate with some precision the expenses which will be incurred if he is to do an adequate investigation. Both the grantor and the grantee must play fair; neither side should compromise to the detriment of the research problem.

FACTORS TO BE CONSIDERED IN COST

(*a*) *Professional Assistants.*—It is not customary for investigators who derive their personal income from salaries from hospitals, clinics or universities or from private or industrial practice to accept personal remuneration for performing research. Research may be considered a privilege and a duty of those members of the medical profession who are equipped by training and experience, as well as by natural endowments, to conduct original investigations.

Often, however, the investigator must employ one or more assistants, such as residents or young instructors, to carry out the details of the investigation. These assistants may devote all or a substantial part of their time to the investigation. At times they may be employed solely for the purpose of assisting in research, and therefore their salaries are a proper charge against the funds supplied for the investigation. The charge should be based on an actual appraisal of the amount of time they will devote to the investigation. Research funds should not be used to get professional help cheaply for the hospital or clinic.

Evaluation of prophylactic and therapeutic measures has often been seriously retarded by inadequate collection and analysis of quantitative data. Too often sole reliance has been placed on uncontrolled clinical impressions and experience. Consultation with an expert statistician with regard to the planning and conduct of a clinical investigation will often be desirable. Statistical analysis will often be necessary for reliable evaluation of the data collected. Ideally there should be proper training in the medical schools in the handling of quantitative data. As things are at present, funds for statistical consultation will often be necessary.

(*b*) *Technical Assistants.*—Clinical research no longer is confined merely to subjective observations. Objective measurements of the function of various organs and systems, pathologic examination of tissues obtained by biopsy or at operation form an essential part of most clinical investigations. These tests are often time consuming and require skilled personnel especially trained in these technics. Usually universities, hospitals and large clinics have such technical assistants on their staff. Unfortunately, their time is usually devoted entirely to the tests necessary for the routine diagnosis and care of patients. The superimposition of a research project on the ordinary duties of this group often results in curtailment of many tests which might be performed advantageously. In addition, it may seriously affect the adequate performance of the regular duties of the staff. It is often necessary, therefore, to employ additional technical help whose sole duties are in connection with the research problem. The salaries of such personnel are a legitimate charge against the funds supplied for the project.

Many of the observations made on patients are performed by the nursing staff. Hospitals, particularly those receiving charity or part pay patients, are almost universally understaffed with nurses. Furthermore, the turnover in nurses is high because of competitive bidding for their services. An important factor in the successful prosecution of clinical research is a continuity in nursing service. To insure adequate nursing care it may be necessary to pay a premium for such special duty or hire additional nurses outright. The cost of such additional service should be a legitimate charge against the research funds.

(*c*) *Clerical and Stenographic Assistants.*—Proper record keeping is essential to the successful prosecution of any research. Laboratory workers have long recognized the importance of complete records of experiments written at the time the observations are made. Many clinical observers are more lax in the matter of records, often depending on nurses, medical students, assistants or others to record the pertinent observations. These aides have many other duties to perform, and "paperwork" is considered drudgery and is often postponed, resulting in dependence on an imperfect memory. Adequate clerical and stenographic assistance can obviate this difficulty and, in addition, such personnel can prepare the charts, reports and so on that should be made as the investigation progresses. Usually full time clerical or stenographic help is not necessary except where the clinical study is of great magnitude. In budgeting this item, the time to be devoted to this task should be appraised and charges made accordingly.

(*d*) *Expense of Patients.*—Clinical investigations require more than ordinary observation of the patients under study. It is often desirable to hospitalize patients who would otherwise be treated as outpatients. In such instances the patient cannot be asked to bear the cost of hospitalization nor can these funds be legitimately requested from the hospital, school or agency supplying the facilities. The cost must be borne by the research grant.

Patients who would ordinarily be in the hospital for treatment may be asked to remain longer than usually required in order that adequate post-treatment observations may be made. The extra expense entailed in keeping such patients hospitalized beyond the usual time should be paid from the research funds.

(*e*) *Equipment.*—It is rarely necessary to expend funds intended for clinical research for large or expensive equipment. Most institutions have such equipment, but occasionally the nature of the problem will require the use of some instrument or apparatus that is not part of the regular equipment of a hospital or clinic. If this equipment is unexpendable, i. e. not used up or diminished in value during the investigation, the proportion of its cost to be paid from funds for research must be a matter of negotiation. At times the entire purchase price may justifiably be charged to the research fund, particularly if the equipment has no uses other than as a research tool. In such instances, equipment of this nature should not be purchased unless absolutely essential to the investigation. The probable results must justify the expenditure.

If the equipment is expendable and is no longer serviceable after completion of the investigation, the entire cost should be chargeable to the research funds.

(*f*) *Supplies.*—All supplies such as animals, drugs, chemicals, stationery and postage used for the investigation should be computed as part of the expense to be reimbursed from the funds supplied for the investigation.

(*g*) *Project Overhead.*—In addition to the direct costs of an investigation which have been discussed, there are other expenses more difficult to ascertain. Usually these items are overlooked in estimating the overall expenditures for research, but since they are real they must be borne by some one. Usually the burden of meeting such expense has been met by the institution in which the research has been performed. However, rising costs, diminished endowments and other factors are making it more difficult for institutions to meet such costs. Hence an allowance must be made for "project overhead."

Overhead expenses may include the cost of extra janitorial service, unusual use of utilities such as gas, electricity and water, extra laundry for staff and patients, telephone calls and postage. These items cannot be calculated with accuracy, and it has become customary to assign a fixed percentage of the total cost of the project to "overhead" expense. This percentage varies widely with the institution and may range from 10 to 50 per cent. In deciding the figure to be used, thought must be given to the nature of the problem, the time involved in completing the study and the extent to which institutional facilities will be used.

(*h*) *Contingent Fund.*—Since the costs of conducting a research program cannot be estimated with accuracy to the last dollar, and since unforeseen expenses may arise during the investigation, it is usual to provide a contingent fund to cover such emergencies. The amount to be set aside for a contingent fund will vary with the total cost of the project and its nature but is usually not more than 5 or 10 per cent.

(*i*) *Other Expenses.*—Although the items just discussed constitute the principal costs of clinical research, there are one or two items of expense which may arise in certain problems. Occasionally it may be necessary to travel to meetings or conferences. Such travel expenses should be included in the budget as a separate item. Some projects may require extensive social service follow-ups. This is particularly true in problems involving epidemiology, venereal diseases or occuptional diseases. The cost of such follow-up and the salaries, in whole or in part, of the social service workers should be chargeable to the research funds.

ESTIMATING THE COSTS OF CLINICAL RESEARCH

Before a reasonably accurate estimate of the cost of any research project can be made, it is necessary to prepare a fairly detailed outline of the plan of investigation. An effort should be made in preparing this plan to foresee all possible contingencies. A careful appraisal of the amount of laboratory work which will be necessary, the number of patients who will be studied, the amount and type of assistance which will be needed, and the amount of time necessary to complete the problem should be made.

From a detailed plan of investigation it will be possible to arrive at a fairly accurate estimate of the cost of the project. Each item discussed should be considered and the amount required to defray the expense should be entered in the budget. The detailed budget should be presented to the sponsor of the project in justification of the sum requested.

In general, past experience will serve as a useful guide in estimating costs. Such items as salaries and cost of equipment can be calculated with precision. The expense of patients and the cost of supplies will be subject to some error, but if the project is carefully planned this error can be held to a minimum. The overhead and contingent fund cannot be calculated accurately but must be based on sound reasoning.

DISBURSING RESEARCH FUNDS

In many institutions it is a common practice to deposit research grants in a special fund and draw against this fund as the need arises. Bookkeeping details are usually handled by the business office. Unfortunately, it is not often possible to review the records of disbursements and gain an accurate statement of the amounts spent for the various items discussed. Because it is good business and because it will be useful in estimating costs of future research, it is desirable to indicate for what purpose each disbursement is made.

FUTURE TRENDS IN RESEARCH COSTS

Clinical research can no longer be supported on a shoestring if it is to contribute to the advancement of medicine. The day when useful information could be obtained by the grant of a bottle of pills and a few hundred dollars is past. The advances made in the methods of clinical research and the complexity of the problems have increased the costs enormously. Universities and privately endowed institutions can no longer contribute the major portion of the funds for clinical research. These funds must be derived from private sources such as foundations, private donors, industry or public funds. Much is already being done in this direction, but there are still many donors of research grants who do not appreciate the factors involved in the cost of research, and there are many investigators who have not taken the time to analyze their expenditures.

Investigators are not generally interested in "short term" studies. Such investigations usually do not contribute to medical progress in proportion to their cost. Furthermore, it is usually impossible to provide adequate professional and technical assistance for short term investigations. Occasionally a small study may be incorporated into a major research project without disrupting the project or increasing the cost prohibitively. However, this must be regarded as a compromise, since the primary interest of the investigator lies with his major study, and he accepts the short term study only to secure additional funds to assist his program.

Long range studies, though costly, usually give greater returns to both the investigator and the sponsor for the amount of money expended. Furthermore, such long range projects often open new fields of investigation, lead to the development of new therapeutic agents and provide training for young investigators. Therefore, sponsors of research projects should undertake the support of long range fundamental projects even though the total number of projects which may be supported is reduced.

It is becoming apparent that much expense and time can be saved if certain appropriate clinical investigations proceeding in various centers can be coordinated through some impartial central agency which will provide a means for rapid interchange of information and which can assist in integrating the work of various investigators. Such coordination was performed by the Office of Scientific Research and Development and the Committee on Medical Research during the recent war and resulted in great advances in medicine. Owing to necessity of the emergency, the coordinating agency often had to impose its will on the investigator; but the freedom of the investigator must be preserved in peacetime. Any coordinating agency should be just that and should not attempt to dictate how an investigation is to be performed or how much money is to be spent on it. It is moreover neither desirable not within the capacity of any such voluntary coordinating agency as the Therapeutic Trials Committee to function with respect to more than a small fraction of the total number of clinical investigations in progress at any time.

The Council on Pharmacy and Chemistry has established the Therapeutic Trials Committee for the purpose of assisting sponsors wishing to support research and investigators anxious to participate in worth while therapeutic research. It is hoped that this committee will enable medical progress in therapeutics to be made in appropriate instances with less waste of both time and effort than is possible without some central coordinating agency. The overhead involved in the committee operations is borne by the Committee, thus allowing all funds derived from sponsors to be used for actual research.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - Chicago 10, Ill.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Eight dollars per annum in advance

Please send us promptly notice of change of address, giving both old and new, always state whether the change is temporary or permanent Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, JANUARY 4, 1947

THE CENTENNIAL YEAR

1947 is Centennial Year for the American Medical Association. The history of the Association is now being published serially in The Journal. Physicians interested in organizational work will find in the history of the Association many situations which recur in successive generations. The instructional value of careful study of the processes by which the Association came into being, its motivations, its problems, its technics and its progress cannot be overestimated.

As was reported to the House of Delegates at its midwinter session in Chicago in December, plans are already well under way for celebration of the Centennial at the Annual Session in Atlantic City June 9 to 13. The program which was outlined in skeleton form is fast assuming completion.

On June 7 the Board of Trustees and officers of the Association will tender a banquet to leaders in the industries and occupations associated with medicine, at which distinguished speakers will comment on the influence of American medicine on the nation's progress.

On Sunday, June 8, a religious service will be held in the great hall in Atlantic City at which three great religious leaders will speak on the spiritual aspects of medicine and health Those scheduled at this time include Monsignor Fulton J. Shean of Catholic University, Washington, D. C., Rabbi Joshua Liebman of Boston and Dr. Ralph Cooper Hutchison, president of Lafayette College. On this Sunday ministers throughout the nation will be asked to devote their sermons to a similar topic. It is hoped that in all the communities throughout the country physicians who are associated with religious groups will take up with their spiritual leaders at an early date the desirability of such a program. It is hoped furthermore that arrangements can be made, as now seems likely, for a national broadcast of the religious services from Atlantic City.

The House of Delegates of the American Medical Association will begin its Centennial Session on Monday, June 9, in the Traymore Hotel. Simultaneously the largest technical and scientific exhibit ever developed by the American Medical Association will open in the great Convention Hall. At the same time an exhibit for the public depicting the progress of scientific medicine will be made available in one of the large spaces on the boardwalk.

The General Scientific Meetings will include reviews of scientific advancement in most medical fields. The tentative program was published in The Journal of Dec. 28, 1946, page 1091. The present status of our knowledge of such subjects as the antihistamine drugs, poliomyelitis, cancer, the antibiotic drugs and radioactive products in medicine will be presented by distinguished leaders of research in these fields. There will be panel discussions on the modern management of heart disease, emergency surgery and antibiotic therapy. Distinguished guests from abroad are scheduled for each of the programs.

A motion picture program is being developed especially for the occasion and will include among other special showings a film on the evolution of the scientific medical motion picture.

The section meetings planned for the Atlantic City Session will be held as usual. On the program for each section there will be a foreign guest who is a leader in his specialty. Another speaker will present a historical paper on the development of the specialty concerned during the last hundred years. Subsequently these historical contributions will be assembled in book form.

The eminent foreign guests of the Association will be presented at the opening of the General Session, at which time the President makes his address.

Many other events are in process of development. The committee on the Centennial Celebration is confident that the program for this occasion will represent a high point in the assemblages of physicians anywhere in the world. In order that arrangements may be made to house and feed properly the great number of visitors who will attend, all who contemplate coming to the Atlantic City Session should communicate at the earliest possible moment with the Subcommittee on Hotels, Dr. Robert A. Bradley, Chairman, 16 Central Pier, Atlantic City, N. J.

"ANTIDOTAL" PROPERTY OF FILTRATES OF PENICILLIUM NOTATUM

Fleming, Florey, Chain and other early investigators were concerned principally with the bacteriostatic and bactericidal properties of the cultures of Penicillium notatum. The effect of these cultures on bacterial toxins was not investigated. Neter[1] in 1945 found that clavacin and pyocyanase decreased the toxicity of tetanus toxin, whereas penicillin, streptomycin and actinomycin A failed to do so. Sodium penicillin in amounts of 500 to 5,000 Oxford units failed to decrease the toxicity of tetanus toxin or caused only a minimal reduction in toxicity. Ramon and Richou[2] showed that filtrates of Bacillus subtilis are capable of profoundly affecting or even completely destroying diphtherial, staphylococcic and tetanus toxins. Richou and the Ramons[3] also demonstrated that filtrates of cultures of Penicillium notatum possess the same "antidotal" power as B. subtilis against certain exotoxic bacterial toxins. When 2 cc. of staphylococcic toxin of the strength of 400 hemolytic doses to 1 cc. were mixed with 2 cc. of a filtrate of a culture of Penicillium notatum containing 90 international units of penicillin per cubic centimeter and the mixture was kept in an incubator at 37 C., the 800 hemolytic doses of the toxin contained in this mixture were completely inactivated in three hours, while 1,600 doses were neutralized in six hours. Experiments on guinea pigs showed a complete destruction of 150 fatal doses of diphtheritic toxin when mixed with 2 cc. of a filtrate of Penicillium and kept for twenty-four hours at a temperature of 37 C. The toxin itself when exposed to the temperature of 37 C. for the same duration of time did not lose any of its toxicity. The toxin-filtrate mixture did not lose any of its effectiveness when exposed to temperatures of 18 or 20 C.; when exposed to a temperature of 5 C. the mixture produced its effect at a slower tempo. Heating of the filtrate to 55 C. for one half to one hour did not increase its "antidotal" property. The filtrate becomes less effective at temperatures above 60 C. Addition of 0.5 cc. of solution of formaldehyde to 100 cc. of the filtrate with or without heating it to 55 C. for one half to one hour did not appreciably alter its effectiveness. The inactivating or "antidotal" property of the formaldehyde treated and warmed filtrates of Penicillium notatum persists for as long as three months if kept at a temperature of 5 C. Addition of human serum to the mixture of staphylococcic toxin and filtrate of Penicillium notatum does not alter the "antidotal" effect.

The authors object to the use of the term "antitoxic" because the latter applies to the property of antitoxins to neutralize the corresponding toxins. The term "antidotal" seems to be justified in the present case because it describes a substance capable of annulling the noxious effect of bacterial toxins whether that is accomplished by decomposing them or by combining with them. Penicillin apparently loses this "antidotal" property in the process of its derivation and purification. The authors believe that certain precautions observed in the process of preparation of penicillin may at least partly avoid these undesirable effects. They stress the importance of developing technics for concentration and purification of penicillin which will conserve these antagonistic principles. An excellent precaution is to add formaldehyde in proper proportion to the cultures of Penicillium before their filtration or to the filtrates themselves or to both or to subject them to the action of formaldehyde and heat simultaneously. In this way the filtrates will be protected in the course of their preparation and in the course of their utilization against contamination with certain micro-organisms which favor the producton of penicillinase, the latter being destructive of the antagonistic properties of penicillin.

The discovery of the "antidotal" quality possessed by the crude filtrates of Penicillium notatum suggests that the same property is probably possessed by filtrates of other antagonistic germs and enlarges greatly the possibilities in the domain of antimicrobic therapy.

---

[1] Neter, E.: Effects of Penicillin, Clavacin and Streptomycin on Tetanus Toxin, J. Infect. Dis. **76:** 20 (Jan.-Feb.) 1945.

[2] Ramon, G., and Richou, R.: Des propriétés antagonistes des filtrats de culture du "B. subtilis" à l'égard de certaines bactéries et des toxines microbiennes: Etude expérimentale, Presse méd. **53:** 405 (July 28) 1945.

[3] Ramon, G.; Richou, R., and Ramon, J.: Sur les propriétés antidotiques des filtrats de culture de "Penicillium notatum" à l'égard des toxines microbiennes, Presse méd. **54:** 637 (Oct. 2) 1946.

SICKLE CELL ANEMIA, A RACE SPECIFIC DISEASE

The most significant feature of sickle cell anemia is not its characteristic bizarre deformation of erythrocytes but the fact that it is apparently the only known disease that is completely confined to a single race. Other diseases may be limited to a specific group of people because of disease provoking customs and habits (e. g. betel nut cancer) or to a given geographic area that may or may not be inhabited by a homogeneous group (e. g. trypanosomiasis). But foreigners practicing the local customs or residing in these areas become equally liable to the diseases. Sickle cell anemia, however, is independent of either geography or customs and habits. Its occurrence depends entirely on the presence of Negro blood, even though in extremely small amounts. The disease was discovered in Chicago in a Negro medical student whose forebears had long since adopted Western civilization. Hundreds of cases of sickle cell anemia had been demonstrated in American Negroes before it was even found to occur in Africa, the accepted place of its origin.

The publication by Herrick[1] of the original description of sickle cell anemia was followed by numerous reports of similar cases confirming it as an entity. All the cases were at first in Negroes. Then further reports began to appear indicating its occurrence in the million mark and three approach 500,000. We shall soon have 5,000,000 people enrolled in our voluntary prepayment plans.

---

[1] Herrick, James B.: Peculiar Elongated and Sickle Shaped Red Blood Corpuscles in a Case of Severe Anemia, Arch. Int. Med. *6:* 517 (Nov.) 1910.

Such facts are encouraging, but your reference committee is mindful that to get thus far small groups of physicians in various states have worked hard and with great sacrifice these many years to accomplish this tremendous task in behalf of social betterment. Only those who have worked on the early medical care plans can know the soul-tiring difficulties and obstructions that appear in the uncharted course of these new ventures. Even today no group but the medical profession has cared to pioneer very far away from the well known limits of surgical and obstetric care insurance. In these two fields, as well as in hospitalization insurance, actuarial statistics are now available to permit the expectation of a sound fiscal experience. But to add to this coverage the choice of comprehensive or even limited medical care under a popular policy premium—that is another matter. In essaying to do this the physician supporters of plans in various parts of the country have surrendered on the unit ratio basis literally hundreds of thousands of dollars for services rendered so that the public might receive the 100 per cent full measure of its contract. It appears that in no instance in this country have patients suffered poor medical service or financial loss because of participation in a physician nonprofit voluntary prepayment plan. All honor to the founder pioneers and the loyal physicians contributing to this first chapter of voluntary medical care insurance. But to grow and succeed requires, after all, a foundation of sound economy. The committee counsels the profession at large, this House of Delegates, state and county medical societies and medical care plans, new and old, to keep closely in touch with the Council on Medical Service of the American Medical Association so that they may learn from the authority of experience how to form a sound voluntary care plan, service it properly, make it appeal alike to patient and to physician and how to adapt it to the needs of the community. We now know enough to take the next decisive step forward. Let us do it for the sake of the American family.

The Council report calls attention to the handling of the technical problems of plan administration by Associated Medical Care Plans. Your reference committee bespeaks a cooperative relationship between these two bodies working on a common problem.

2. National Health Congress: Your reference committee has studied the import of the setting up of a National Health Congress. Further data and statistics are being collected. However, in a supplemental report the Council states its belief that to set up a national health congress as a permanent body is not advisable. It is of the opinion that conferences called for special purposes at certain times are more desirable. The Council, therefore, requests the House to rescind its previous instructions to the Council to proceed with the establishment of a National Health Congress. Your reference committee concurs with this request and recommends that the House take this action.

3. Speakers' Bureau: Your reference committee importunes all state medical societies to establish speakers' bureaus and to cooperate closely with the activities of the Council in this regard. It notes with satisfaction the distribution of material bearing important subject matter to the delegates at this meeting.

4. United Mine Workers Health Fund: Your reference committee notes with satisfaction that the Council on Medical Service is following closely the developments in the bituminous coal situation and the United Mine Workers Health Fund and Welfare and Retirement Fund. The report of the Council at this time is necessarily factual, and any policy relative to these projects must await the release of the survey report now being made by the United States Navy under the direction of Admiral Joel T. Boone.

Your committee recognizes in these proposals a new type of economic philosophy, one with far reaching implications and concerns, which well may influence and possibly change the whole basic pattern of medical practice. The manner in which these funds ultimately will be administered and the instrumentalities through which medical care will be delivered will require our careful study and guidance. Such plans as these doubtless will occupy a prominent place in any collective bargaining of the future by labor and other organized groups. We shall have to project ourselves into this developing situation and play a leading role in the evolution of these plans for medical care.

It would take this occasion to commend the painstaking and patient work of Dr. Walter B. Martin, whose efforts and counsel have already laid the groundwork for wise negotiation and for the amicable solution of the complex problems that will arise.

5. Taft-Smith-Ball Bill: The Council is collecting opinions and suggestions from state medical societies on legislation of this nature. Your reference committee believes it is a province of medicine to take an active, guiding part in health legislation. It envisions the more beneficial results obtained in dealing with health problems when statesmen consult with the members of the medical profession before attempting health legislation.

6. *Hill-Burton Bill*: Your reference committee studied with much interest and with approval a special report of the Council suggesting principles to govern cooperation in the Hill-Burton Bill program. It recommends certain minor changes in the text of the Council's special report as follows:

Eliminate words "and technical personnel" in paragraph in Definition of a Health Center so that the paragraph will then read:

> Definition of a Health Center. From the point of view of the medical profession, a health center is an institution in a community which houses *the public health functions* of a community and which makes available to the medical profession equipment to aid in the prevention, diagnosis, and treatment of disease.

Your reference committee also recommends a change in the paragraph referring to "Radiologic, Pathologic and Other Laboratory Services" to read "Radiologic, Pathologic and Other Medical Services"; a change from the word "special" to "specialist" and a change by eliminating the words "and laboratory" so that that phrase will read, "*to establish radiologic and* pathologic services."

Your reference committee approves the general and specific recommendations of the Council report as follows:

Definition of a Health Center: In view of the importance of this subject, the Board of Trustees has authorized an immediate survey and inspection of existing health centers with a view to determine the nature of the services they render and the necessity for such services in relation to other existing facilities in the communities concerned. Your committee therefore recommends that following the completion of this survey the House of Delegates requests the Board of Trustees, the Council on Medical Service and the Council on Medical Education and Hospitals to prepare a suitable definition of a health center or of health centers of varying types in order to aid the Division of Hospital Facilities of the U. S. Public Health Service in drawing up the regulations for making effective the provisions of the Hill-Burton Act.

7. Public Assistance Programs: Your reference committee commends the Council's interest in ways and means of organizing medical care programs for recipients of public assistance funds. The Council is gathering information and data on such programs. Special attention is being given to the possibility of utilizing existing prepayment plans.

8. Regional Conferences: Your reference committee approves the program of regional conferences.

9. Studies and Publications: Your committee notes that the Council is collecting data and information relative to the medical cooperative movement throughout the country. It is bringing up to date its material on Contract and Group Practice.

Your reference committee agrees to the popularity of the News Letters and hopes for an increasing distribution of this valuable material.

10. Film on Prepayment: The Council in a supplemental report states it has deferred the making of a movie film on

prepayment plans as impractical and too expensive at the present time.

11. Contacts: Your reference committee seeks to encourage the contacts of the Council with many special groups and adds for special consideration hospital groups and the nursing and the pharmaceutic professions. It notes the reports of conferences with private insurance associations. Among problems discussed were simplification of insurance forms and disability claim blanks. Your reference committee urges the House of Delegates to approve the continuation of these conferences.

12. Washington Office: Your reference committee gave especial attention to the report on the Washington office. It now has new quarters, larger and more attractive, at 1302 18th Street, N. W. Reconstruction of the filing system gives an added improvement. Your committee congratulates the Council on its constructive policy toward the Washington office.

13. Headquarters Office: Your committee notes with great satisfaction the enlargement of the Headquarters office. Recent addition of suitable personnel to implement our greater activities is highly commendable.

REPORT OF COMMITTEE ON RURAL MEDICAL SERVICE

The report describes proposals for meetings with organized farm groups and outlines a discussion of the following subjects: (1) bringing and holding well qualified physicians in rural communities; (2) hospitals, facilities and health centers; (3) voluntary prepayment plans; (4) nursing needs of rural communities; (5) health councils as agencies for promoting rural health, and (6) medical care for lower income groups.

Your reference committee approves the exploration of such all important topics. The report points out that in the Hill-Burton Bill priority is given to rural areas in greatest need, but since these communities usually have the least economic resources they cannot meet the two-thirds cost assessed to them in these projects. Each state will need to develop plans and to take action to meet this situation. Your committee is impressed with this farsighted and logical observation. It wishes to emphasize the following paragraph of the report:

> Farmers interested in improving their community want principally a doctor. It is doubtful if much enthusiasm could be stimulated in a public health facility if it did not also do something to bring and hold a doctor.

Your committee concurs in the importance of prepaid medical care and hospitalization plans.

The report speaks of the development of cooperative associations and other consumer-controlled groups for provision of medical care. There are some eighty-nine cooperatives in thirty-one states now operating. Since these groups expect to employ physicians, the report requests that some minimum standard or basic principles involved in such contracts be adopted by this House of Delegates.

Your reference committee recommends the following resolution:

> Although there is some difference of opinion regarding the establishing of consumer cooperative medical care programs nevertheless they are functioning in certain areas of this country; and
>
> WHEREAS, it is necessary that in order to ensure good medical care certain basic principles be formulated; therefore be it
>
> *Resolved*, That this House of Delegates request the Board of Trustees to set up proper standards to be used by cooperative or consumer-controlled groups when providing medical services.

Respectfully submitted,

HERBERT H. BAUCKUS, Chairman.
JOSEPH H. HOWARD.
GEORGE P. JOHNSTON.
J. STANLEY KENNEY.
L. HOWARD SCHRIVER.

On motions of Dr. Bauckus, duly seconded and carried after discussion, the report of the reference committee was adopted section by section and as a whole.

Report of Reference Committee on Reports of Officers

Dr. John W. Cline, Chairman, presented the following report, which was adopted on motion of Dr. Cline, seconded by Dr. Clark Bailey, Kentucky, and carried.

The Reference Committee on Reports of Officers had referred to it three items for consideration. These were: the address of the Speaker of the House; the address of the President of the American Medical Association, and the address of the President-Elect of the American Medical Association.

Speaker's Address.—The committee desires to express its appreciation of the efforts of the Speaker to expedite the business of the House by means of the various changes he has instituted in the past year. It wishes also to commend him on his conduct of meetings of the House.

The committee would like to call the attention of the House to the recommendation of the Speaker that the individual delegates pay close attention to the proceedings of the House; make known their wishes relative to business of the House referred to reference committees, and actively participate in the deliberations of the House.

President's Address.—The committee desires to compliment the President on his brief and appropriate remarks which the entire House heard but of which the committee has no copy to which to refer.

Your committee shares the satisfaction of the President on the past accomplishments of the American Medical Association and agrees with his predictions concerning the future growth, development and strength of the American Medical Association.

The committee, however, would like to call to the attention of the House that the American Medical Association would not be justified in assuming that the present political trend will indefinitely continue and that during the period of peace and freedom allotted to us every effort should be made to strengthen the position of American medicine to the end that should we again be faced with tests similar to those of the recent past, we would find our position much stronger than at present.

President-Elect's Address.—The committee likewise wishes to commend the President-Elect for his remarks of confidence in the future of the Association and agrees that there should be no change in the fundamental principles underlying the scientific program of the organization.

The committee feels that it would impose an added burden on the officers of the Association to require that they render semiannual reports to the House of Delegates. The committee believes that under normal circumstances annual reports are sufficient. It therefore recommends that routine reports of the officers at the ad interim sessions of the House of Delegates be discontinued.

Respectfully submitted,

JOHN W. CLINE, Chairman.
A. R. MCCOMAS.
JAMES Q. GRAVES.
IVAN FAWCETT.
RAYMOND L. ZECH.

Report of Committee to Consider Revision of the Constitution and By-Laws

Dr. F. F. Borzell, chairman, stated that at a meeting during the morning the committee decided that in view of the fact that there is no real emergency as far as any changes in the By-Laws are concerned, and rather than attempt to put forth an incomplete and, perhaps, unsatisfactory revision at this time it would like very much to continue its activity and postpone final action on these By-Laws until June.

In the meantime, however, the Committee would like very much to have expressions of suggestions for changes, or for deletions in the mimeographed report from this House, either this morning or in the interval between now and the first of February or both. The committee hopes that by adopting this procedure it will be able to place in the hands of all the delegates who will be at the annual session a complete and completely edited copy of proposed changes in the Constitution as well as in the By-Laws, so that you may come to the annual session completely prepared to speed the approval and acceptance of the revised By-Laws.

Dr. Borzell suggested that the House go into a Committee of the Whole purely to receive suggestions and opinions without debate of any special details but with the purpose of the committee's securing the opinion of the House so that it can be prepared to make changes; the motion was seconded by Dr. L. G. Christian, Michigan, and carried.

Dr. James C. Sargent, Wisconsin, moved that the House resolve itself into a Committee of the Whole, and the motion was seconded by Dr. George W. Kosmak, New York, and carried.

The House recessed at 10 o'clock to go into session as a Committee of the Whole for the purpose of conveying to the Committee to Consider Revision of the Constitution and By-Laws suggestions from members of the House.

The House at 10:35 a. m. reconvened in regular session with the Speaker, Dr. R. W. Fouts, presiding.

Report of Committee of the Whole

Dr. James C. Sargent, chairman, reported that the Committee of the Whole had been in session and its report consisted largely of informal recommendations to the Chairman of the Committee to Consider Revision of the Constitution and By-Laws, and moved adoption of the report.

Dr. Walter E. Vest, West Virginia, seconded the motion, which was carried.

On motion of Dr. Allen H. Bunce, Georgia, seconded by Dr. Walter E. Vest, West Virginia, and carried, the House expressed its thanks to the members of the committee consisting of Dr. Francis F. Borzell, Chairman, and Dr. Louis A. Buie, Dr. E. S. Hamilton, Dr. Joseph D. McCarthy, Dr. Stanley Osborn, Dr. B. E. Pickett, Dr. Floyd Winslow and Mr. T. V. McDavitt for their work on the revision of the By-Laws.

Amendment to Present By-Laws, Chapter IV, Section 1

The Speaker ruled that since proposed amendments to the By-Laws had been proposed on Tuesday, an amendment should be acted on today.

Dr. Albert F. R. Andresen, New York, moved that there be deleted from section 1 on Nominations, under chapter IV of the By-Laws now in effect, the last sentence reading "No member of the House of Delegates nor general officer of the Association shall be eligible for election to the office of President-Elect or Vice President," and the motion was seconded by Dr. George W. Kosmak, New York, and carried by more than a two-thirds vote, that section 1, chapter IV of the By-Laws at present in effect will now read:

SECTION 1. NOMINATIONS—Nominations for office shall be made orally, but a nominating speech must not exceed two minutes. The Treasurer shall be nominated by the Board of Trustees.

Question of Publication of Rich Report

The question was raised as to how long the Rich Report was to be considered confidential. The discussion brought out that that report is copyrighted by the American Medical Association and may not be quoted without permission from the American Medical Association but that those portions of the report of the Special Committee on Executive Session for Consideration of the Rich Report that were adopted by the House would be printed and would include the portions of the Rich Report to which they referred; advance pages of the report of the special committee would be sent to the editors of the journals of the constituent state medical associations.

Report of Reference Committee on Medical Service

Dr. Herbert H. Bauckus, Chairman, presented the following report, which was adopted on motion of Dr. Bauckus, seconded by several and carried:

The American Cancer Society has established regulations for the control of information services, detection centers, service programs and diagnostic and treatment clinics. The American Cancer Society's control over any of these is exercised only in the distribution of funds with the exception of the information services. None of these agencies can be set up or operated without the approval of the local county medical societies.

This county medical society control pertains not only to permission to set them up but to everything pertaining to their operation, staffing and economic control. The American Cancer Society itself will not own or operate any agency. The only other agency which will have a part in any of them is the American College of Surgeons, which will be requested to inspect the detection centers from a purely professional point of view to determine whether or not they are doing a satisfactory professional job. This will be done just as the American College of Surgeons now inspects diagnostic clinics and hospitals.

The regulations which have been drawn up have been approved by the Professional Advisory Committee of the American Cancer Society, on which there are representatives of the American Medical Association, and by the Council on Medical Service of the American Medical Association.

It is recommended that the House of Delegates give approval to this program.

The program which has been presented by the American Cancer Society for inclusion in its service manual indicates that funds for all elements of its program are given only to agencies which operate to the satisfaction of the county medical society. With the exception of the information service, the part played by the American Cancer Society is merely that of dispensing funds and furnishing volunteers to assist agencies which receive its help, again under plans approved by the county association. Confusion has occurred in the minds of many physicians due to the fact that the United States Public Health Service is also dispensing funds in various states for the control of cancer. This is an entirely separate program from that of the American Cancer Society.

The information service which is operated by the local branches of the American Cancer Society does not diagnose or treat but dispenses information about cancer and assists the inquiring person in meeting his needs for diagnosis and treatment. This service will not be operated except with the continuing approval of the county medical association.

The contemplated inspection of quality of service which the American College of Surgeons is to be requested to undertake is similar to inspections of cancer clinics and hospitals which have been conducted by that organization for many years.

The American Cancer Society is one of the great voluntary health agencies mentioned in the Ten Point Program of the American Medical Association and your reference committee feels that its program should receive the support of the House of Delegates.

Respectfully submitted,

HERBERT H. BAUCKUS, Chairman.
JOSEPH H. HOWARD.
GEORGE P. JOHNSTON.
J. STANLEY KENNEY.
L. HOWARD SCHRIVER.

The House recessed at 11:05 a. m. and reconvened at 11:25 a. m.

Report of Reference Committee on Legislation and Public Relations

Dr. Charles H. Phifer, Chairman, presented a report of the Reference Committee on Legislation and Public Relations, which, on motion of Dr. Phifer, duly seconded and carried after discussion and amendment, was adopted section by section and as a whole. The amended report reads:

1. Resolution on Woman's Auxiliary: Your reference committee has considered this resolution. It is most appreciative of the excellent liaison and educational program that the Woman's Auxiliary has contributed to medicine. Your committee concurs in this resolution and recommends that it be approved by the House of Delegates and that the Board of

Trustees be requested to outline and assist the Woman's Auxiliary in the guidance of its program.

2. Resolution on Appointment of Surgeons General: Regarding the resolution presented with the report of the Committee on National Emergency Medical Service concerning the Surgeons General of the Army, Navy and Public Health Service and the Chief Medical Officer of the Veterans Administration your reference committee suggests substituting the following resolutions:

Resolved, That the Secretary of the American Medical Association inform the President of the United States, the Secretary of War, the Secretary of the Navy and the Federal Security Administrator of the willingness of the American Medical Association, through a committee appointed for that purpose, to confer and cooperate with them in the important question of the selection of a Surgeon General for the Army, the Navy and the Public Health Service; and be it further

Resolved, That the President of the United States, the Secretary of War, the Secretary of the Navy, and the Federal Security Administrator be informed of the intensive study of war medicine which the Association is conducting and that the results of this study will be made available to them.

3. Resolution on Fellowship of Members of Permanent Corps of Veterans Administration: Your reference committee has considered this resolution and recognizes that it falls into two natural divisions: (*a*) The provision for representation of the Medical Department of the Veterans Administration in this House; (*b*) The admission to Fellowship of the members of the permanent corps of the Administration without the payment of dues. Your committee considered these separately.

In reference to the first division (*a*) regarding the representation in the House of Delegates, your reference committee has very carefully considered this question and its responsibilities. It is deeply conscious of the fact that the recent acts of Congress have established the Veterans Administration as a permanent medical corps of the United States, with General Hawley in charge of the program for medical care of the veterans, a position comparable to that of the Surgeon General of the Army, Navy and Public Health Service. Therefore your committee recommends that the Veterans Administration be given representation in the House of Delegates and that the House proceed to take such steps as are necessary to accomplish this.

Regarding the second division (*b*) as to Fellowship, your reference committee believes that due to the fact that the Veterans Administration has been authorized to care for 15 million veterans, the members of the permanent medical corps should receive the same consideration as that given to medical officers of the Army, Navy and Public Health Service with the provision that Fellowship will continue only as long as they remain members of the permanent corps of the Veterans Administration. Such Fellows shall not receive The Journal or other publications of the American Medical Association except by their personal subscription.

Respectfully submitted,

Charles H. Phifer, Chairman.
Thomas P. Murdock.
John J. Masterson.
Lowell S. Goin.
Edward Jelks.

Report of Reference Committee on Reports of Board of Trustees and Secretary

Dr. Clarence G. Bandler, Chairman, presented the following report, which was adopted section by section and as a whole on motion of Dr. Bandler, duly seconded and carried:

REPORT OF SECRETARY

Your reference committee has reviewed the Secretary's interim report and duly appreciates the lack of adequate personnel and the shortage of supplies which are essential to the maintenance of the vast volume of work which that officer has accomplished. Your committee approves the report and wholeheartedly endorses the campaign for increased Fellowships. It notes that 3,986 Fellows have been added in the past eleven months and would suggest that the distinction between a member and a Fellow be explained at every opportunity, so that the advantages accruing to Fellows will be better understood.

The additional items in the Secretary's brief report will be more elaborately presented in his report at the next annual Session.

REPORT OF THE BOARD OF TRUSTEES

Your reference committee has perused with considerable interest the reports of the activities of all the councils, bureaus and committees under the direction of the Board of Trustees. Your committee wholeheartedly approves all of these reports. Because of the vast number of individual communications, your committee will refer only to those of especial interest to the House of Delegates.

1. (*a*) The Journal of The American Medical Association and Special Journals: Your committee is fully aware of the difficulties under which The Journal is published and especially would commend the general improvement of all the articles appearing in the various publications of the Association and the business-like manner in which these periodicals are handled. It hopefully looks forward to the elaboration of *Hygeia* and knows that a wider distribution will soon be forthcoming when the obstacles in the shortage of paper have been overcome.

1. (*b*) Directory Department: Your committee has full realization of the many causes for delay in the issuance of a new directory. It trusts that these obstacles will soon be overcome and that a new directory will be published at an early time.

1. (*c*) Report on History of the American Medical Association: It is surely pleasing to know that a compilation of the history of the American Medical Association is in the process of preparation and will be presented in extenso before the Centennial Session in June, 1947. The portions of this material already appearing in The Journal are exceedingly interesting and have aroused a large measure of favorable comment.

2. (*a*) Council on Pharmacy and Chemistry: Your committee realizes that the Council's standard for purity of preparation of all medicaments and the proper labeling of all preparations assures complete protection to the public to whom these materials are purveyed.

The publications of the many activities of this council not only serve to inform physicians more completely but also have definite educational value.

2. (*b*) Chemical Laboratory: The cooperation of the Chemical Laboratory not only serves as a check on the constituents of products investigated by the Council but also assures the approval of only those that are of distinct value to both the patient and the physician.

2. (*c*) Council on Physical Medicine: Your reference committee notes with considerable interest the activities of this council in evaluating useful devices in the field of physical medicine, and especially in separating in its recommendations those that are beneficial from the many that are definitely detrimental to the patients. It also unqualifiedly approves the utilization of the various consultants in the many fields of this council's activities. It can do no better than to quote from a portion of the report which states that: "The successful employment of physical medicine during World War II has had a great influence on the acceptance of physical medicine by the general practitioner." One of the results will be the wide application by the physician of physical medicine in his curative efforts.

2. (*d*) Council on Foods and Nutrition: Your reference committee is of the opinion that this council is doing a most important work and, because of increased responsibility, this council merits not only the continued interest but also the full support of the Association in its efforts. Your committee approves the recommendation for enlargement of the staff to meet the greater demand on its facilities due to postwar expansion.

2. (*c*) Council on Industrial Health: Your committee has a deep sense of appreciation of the multiplicity of the activities of this council. The detailed report is in the hands of another reference committee. However, your committee recognizes the need for cooperation with other agencies and endorses the Council's stand in the Hearing on Public Law 658 enacted by the 79th Congress, wherein the Council insisted on proper safeguards that are essential for the public good.

This Council has brought to the attention of surveying groups the lack of industrial health services in coal mining areas. Your committee recognizes the fact that health and welfare are likely to be important factors in future wage agreements and would add its voice in urging the Council on Industrial Health not only to observe all developments in this field but also to report thereon promptly.

3. (*a*) Bureau of Health Education: Dissemination of proper information in regard to health and needed legislation is essential for the education of the public. It promotes an understanding of what medicine represents in securing better health for our people. Your committee notes with pleasure the employment of the several methods for conveying information, such as radio broadcasts, television, lectures and the distribution of literature. Your committee especially commends the activities of this bureau in regard to its program on physical fitness.

3. (*b*) Bureau of Medical Economic Research: Your committee approves the action of the Board of Trustees in the appointment of a well qualified director of the Bureau of Medical Economic Research. Reactivation and expansion of this bureau, especially in the field of economic research, should result in the accumulation of sound statistical information.

3. (*c*) Bureau of Exhibits: It was noted that the scientific exhibits at the recent meeting in San Francisco were outstanding, and your committee is exceedingly well pleased with the elaborate plans for the Scientific Exhibit at our forthcoming Centennial Celebration.

SUPPLEMENTARY REPORT OF THE BOARD OF TRUSTEES

1. Resolutions on Inclusion in The Journal of Important Medical Activities in Puerto Rico: Your committee is pleased to note that the important activities of the Medical Association of Puerto Rico are now included in The Journal in the section on domestic information together with the news from the several states.

2. Session on History of Medicine: A Session on the History of Medicine will be included in the Section on Miscellaneous Topics at the 1947 Annual Session. Should this session arouse sufficient interest, it is possible that a Section on the History of Medicine may be established at a later time.

3. Public Relations and the Rich Report: This entire matter has been acted on by the House of Delegates and warrants no further comment.

4. Resolution on Program of Health Legislation Beneficial to the People: In reference to this resolution passed by the House of Delegates at its meeting in December 1945 the Board of Trustees has accomplished much in stimulating medical legislation. (1) Although the President of the United States has not appointed a Secretary of Health and Welfare in his Cabinet, such designation has been urged; (2) representatives of the American Medical Association appeared at the hearings on the Kilgore-Magnuson Bill and presented suggestions for modification of the original measure, most of which were incorporated in the final bill which was passed by the Senate; (3) as a result of the passage of the Hill-Burton Bill, the board to administer this legislation has held several sessions to which representatives from the American Medical Association have been invited; (4) under the direction of the Board of Trustees, the development of Associated Medical Care Plans, Inc., has been accomplished. This will serve to coordinate all medical care plans; (5) the American Medical Association has now established a department of Public Relations and has expanded the Bureau of Health Education. All of the aforesaid activities are recommended by the resolution and have been carried out at the direction of our Board of Trustees.

In approving the report of the Board of Trustees in regard to its activities as detailed in the report for 1946 to date, your reference committee desires to record its deep sense of appreciation of all of the efforts of the Trustees in furthering the best interests of the American Medical Association.

Respectfully submitted,

Clarence G. Bandler, Chairman.
Edward P. McNamee.
Guy W. Wells.
James P. Wall.
L. J. Kosminsky.

Report of Reference Committee on Medical Education

Dr. J. F. Hassig, Chairman, presented the following report, which was adopted on motion of Dr. Hassig, seconded by Dr. George W. Kosmak, New York, and carried:

Resolution on Study of Child Health Service by American Academy of Pediatrics: Your committee recommends that this resolution be referred to the Council on Medical Education and Hospitals.

Respectfully submitted,

J. F. Hassig, Chairman.
A. W. Adson.
Leland S. McKittrick.
Alfred S. Giordano.
Henry B. Mulholland.

Report of Reference Committee on Miscellaneous Business

Dr. William A. Coventry, Chairman, presented the following report, which was adopted on motion of Dr. Coventry, seconded by several and carried:

Report of Judicial Council: There are seven main articles that have to be discussed in committee. All of them, however, have no great importance at this particular session. Therefore, your committee recommends that the report of the Judicial Council be referred for consideration at the next session of the House of Delegates.

Respectfully submitted,

William A. Coventry, Chairman.
R. B. Anderson.
George A. Woodhouse.
Warren L. Allee.
William F. Costello.

Motion on Dispersal of Federal Funds for the Control of Cancer

It was moved by Dr. Lowell S. Goin, California, seconded by Dr. Frank E. Reeder, Michigan, and carried, that the Council on Medical Service be directed to communicate with each of the constituent state associations urging them to place themselves in contact with those agencies which have under their care the dispersal of federal funds for the control of cancer, to the end that these funds may be administered wisely and with the cooperation of the practicing physicians of the several states.

Expression of Appreciation

Dr. George W. Kosmak, New York, moved that the House express its appreciation to the Speaker for his very effective conduct of this session.

The Vice Speaker, Dr. F. F. Borzell, assumed the chair.

The motion was seconded by Dr. H. B. Everett, Tennessee, and carried.

Motion to Adjourn

The Speaker resumed the chair.

On motion of Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, seconded and carried, the session adjourned at 12:30 p. m.

JOINT COMMITTEE FOR COORDINATION OF MEDICAL ACTIVITIES

MEETING OF COMMITTEE ON POSTWAR MEDICAL SERVICE, CHICAGO, OCT. 12, 1946

The Committee on Postwar Medical Service met on Saturday, October 12, in the Board of Trustees Room of the American Medical Association building in Chicago. The Chairman called the meeting to order at 10:03 a. m Members of the Committee and visitors present were:

Dr. Irvin Abell
Dr. Walter L. Bierring
Dr. Warren F. Draper
Capt William E. Eaton
Dr Morris Fishbein
Dr. Johnson F. Hammond
Mr Fred V. Hein
Dr. Elmer L Henderson
Mr. J W. Holloway Jr.
Dr. Hugo F. Hullerman
Dr. Ernest E Irons
Dr. Victor Johnson
Dr Edwin P. Jordan
Dr. B. R. Kirklin
Dr George F. Lull
Dr James M. Mason
Col. Hugo Mella
Dr. Carl M. Peterson
Lieut. Col. William N Piper
Rev A. M. Schwitalla, S J.
Dr. R. L. Sensenich
Dr. H H Shoulders
Mrs. M. V. Shuler
Dr. LeRoy P. Sloan
Dr. Dean F. Smiley
Lieut Col. John H Voegtly

ADOPTION OF MINUTES OF JUNE MEETING

The minutes of the meeting held June 8, 1946 (THE JOURNAL, October 19, p. 393) were approved as corrected

MEMBERSHIP

The Chairman announced that the Board of Trustees of the American Medical Association had appointed Dr R. L. Sensenich, South Bend, Ind, to succeed Dr. Francis G. Blake (resigned) as a member of the Association's committee He also announced that Lieutenant Colonel Voegtly had been designated as the representative of the Office of the Surgeon General, U. S. Army, in place of Col. Bryan C. T. Fenton, who has been reassigned. He stated further that Dr. F. S. Crockett, chairman of the American Medical Association Committee on Rural Medical Service, who had recently accepted liaison membership on this committee, finds it impossible to attend meetings and has resigned. Dr. Crockett was asked to name another member of his committee so that the problems of rural medical service can be included in the considerations of this Committee. (Dr. H. B. Mulholland, Charlottesville, Va., has accepted appointment as liaison member representing the Committee on Rural Medical Service.)

CHANGE IN NAME AND SCOPE OF COMMITTEE

The Chairman recalled to the attention of the Committee the discussion at the June meeting on continuance of the Committee and the desirability of a change in its name to indicate that the matters now considered are not purely "postwar" in nature but concern American medicine in general. He asked for expressions as to the sentiment of the organizations represented, stating that the Board of Trustees of the American Medical Association had expressed its desire that the Committee be continued. He also stated that the American College of Physicians had so expressed itself. Dr Abell, representing the American College of Surgeons, stated that he was sure that organization would be entirely agreeable. Dr. Bierring said that the Federation of State Medical Boards would like to see the Committee continued, and Colonel Voegtly was sure that the Surgeon General of the Army would desire its continuance. Father Schwitalla stated that the Catholic Hospital Association, which he represents, regards this committee as having done more than any other single agency to bring some order out of chaos. Captain Eaton stated that the Surgeon General of the Navy had expressed the thought that it would be an excellent idea to continue the Committee, and Dr. Draper said the Surgeon General of the Public Health Service also thought it desirable. Dr. Kirklin, representing the Advisory Board for Medical Specialties, was sure that the board would like the Committee to continue. The others present all agreed that the Committee should continue to be active

The Chairman then stated his opinion that the present name does not quite represent present deliberations, such as industrial health and physical fitness. After discussion the name "Joint Committee for the Coordination of Medical Activities" was adopted.

The Committee adopted a motion that the American Red Cross be requested to participate in the activity of this committee and that Dr. Draper be suggested as its representative. The Chairman said the Public Health Service would be asked to appoint another representative

BUREAU OF INFORMATION

The Bureau of Information is still receiving about one hundred letters a week from physician veterans, most of which concern locations The Bureau attempts to influence the men to locate in areas where they are most needed.

There was some discussion of the movement of physicians to new localities, and the question was raised of how information or statistics on the shift about the country might be obtained

SURPLUS PROPERTY

Father Schwitalla, Chairman of the Subcommittee on Surplus Medical, Hospital and Dental Supplies, reported briefly as follows:

> I have not had opportunity to follow up the many leads that were given at the last meeting. Within another month there should be a settling down, so that between now and the next meeting it might be possible to get out a report which might be valuable to the medical societies and to the hospitals and schools. As soon as the information becomes available, I think it should be presented to the subcommittee and, if its members agree, should be published immediately
>
> The surplus property people hope to open up the field more, and I hope that in the next two or three months something can be done to make the surplus property more available to schools

In the discussion Dr. Fishbein said that nobody is satisfied with the way the job is being done and that one serious difficulty is that the director has been changed at least five times Dr. Lull, Dr Henderson and Dr. Abell discussed unsatisfactory developments of which they knew personally, Dr Henderson mentioning a sale advertised to be held in Louisville to which about 400 doctors came from several states only to find they could not buy except in large quantities; all those doctors had to go back home without buying anything It was stated that the Surgeon General of the Army had recommended that all surplus medical supply and equipment be turned back to the original manufacturers and the manufacturers authorized to sell it at a stipulated price with a stipulated profit but that the War Assets Administration had refused permission because the U. S. Public Health Service did not want it done

A motion was adopted that the subcommittee prepare a final report on the surplus property situation and, if the subcommittee thinks it desirable, that the report be published as soon as ready.

INTERN AND RESIDENCY OPPORTUNITIES

Dr. Johnson presented the following statement

> As of today, Oct 12, 1946, there are 9,028 residency positions in 948 hospitals That figure is to be compared with the prewar figure in 1941 of just over 5,000 and shows an overall expansion of from 5,256 to 9,028 As to individual fields: In 1941, in anesthesiology there were 121 positions; now there are 268. In internal medicine there were 803, now 1,393, not quite double. In obstetrics and gynecology 442 before the war and now 768 Orthopedic surgery rose from 194 to 440, pediatrics from 393 to 589, psychiatry from 423 to 767, radiology from 250 to 485 and surgery from 900 to 1,663. The expansion has been rather general and of about the same magnitude in all important fields. The vast majority seem to want training in general surgery When the original estimates were made as to the number of residency places that probably would be needed, it was thought there ought to be approximately double the 1941 number, but that was based on the belief that it would take two years from V-E day for medical officers to be discharged; most were discharged within a year. We now have an increase of 70 per cent in residency positions, which indicates that the hospitals and agencies involved are doing very well, and the number is still expanding. A large number of applications for approval continues to be received

There was lengthy discussion, during which Dr. Johnson was asked and replied to questions as follows:

> How near is supply and demand now balancing? The best criterion we have here is the number of requests received; that has tremendously decreased in recent months

Are the 9 000 residencies all filled? Virtually all are filled

What is the present status of residencies in veterans' hospitals? Very few so far have been formally approved Those residencies will be considered exactly in the same way as other residencies More requests are being received and it is hoped that more and more will be approved

The standards of residency training may have been lowered in some instances, how soon can the demand be filled and the standards raised again? I think the peak will be passed within a year or two and I think we should look forward to reducing the number of residencies from 9,000 to perhaps 6 000 or 7 000 Much of the reduction will be in the nature of the reduction of the number of men in a given residency However the number of institutions participating has increased from 610 to 948 It is probable that later on approximately 200 of those hospitals should be removed from the list

What about the army and navy hospitals? How many are approved? An appreciable number of navy hospitals and some army hospitals have been approved (Colonel Voegtly said The army general hospitals are being approved for extension of residency training, at present there are ten hospitals in that program Captain Eaton stated that eight navy hospitals are now approved by the specialty boards, all the navy hospitals provide internships and consultation boards of civilian specialists assist with training teaching and the like, the program is being pushed along very fast there are about 27 000 patients at home and abroad)

What is the attitude of the specialty boards relative to these residencies approval of which may be discontinued? Are they accepting all of them? A hospital is not placed on the approved list unless the appropriate specialty board concurs

Is it not true that approximately 7 000 graduates now interning will enter the service and that when they come out, by the time the present residents finish there will still be a surplus and a peak after more than a year? I agree with you that the emergency will not be entirely over and the situation back to the prewar status within two years (Colonel Piper said that 14,749 medical officers were discharged as of Oct 5, 1946)

Dr Shoulders thought that the discontinuance of the approval of lots of hospitals at an early date should not now be discussed, since the men who have been discharged now have the priorities and there is a large number of men graduated within the war period, last year and now, who are up for assignment to internships and residencies

Father Schwitalla agreed that if an increased number of present medical students is added to the veterans who are seeking residencies the sum is going to be larger within the next year or two even than in the past He said that it is, however, a bad sign for this curve of residencies to rise

Dr Johnson stated that the hospitals certainly would continue to be encouraged to develop programs and such programs would not be contracted at a more rapid rate than is warranted by the demand

The Chairman made the following observations We are struggling with a difficult problem I think it is splendid that we have such a problem It means that the standard of medical education will continue to rise That is a great contribution of the specialty boards There are a number of hospitals that have been approved on recommendation of the specialty boards and the Council on Medical Education and Hospitals which probably would not have been approved for a long time had inspection been possible If those hospitals can be stimulated to justify their approval, this will provide further improvement in the quality of hospital service

It was Father Schwitalla's opinion that some hospitals are going to improve rapidly but, by the same token, the possibility of some to reach a high level is going to be reduced because there is a tendency among medical students to look for their internships in hospitals where they ultimately expect to have residencies, they want a chance of getting that residency, and they think the hospitals are going to choose from their own staffs, most of the larger hospitals are giving their residencies to their own interns and that has a tendency to put the less desirable medical students into the less desirable hospitals, thus there is a raising of the internships and residencies in the better hospitals but there is a deterioration in the smaller hospitals because they are less desirable for the intern

Dr Johnson's report was accepted with appreciation

THE RESIDENT PROGRAM FOR PHYSICIAN VETERANS

Father Schwitalla chairman of the Subcommittee on Graduate Education of Physician Veterans presented the following report

1 A Report of Progress

Dr Victor Johnson and the chairman of the subcommittee agreed to attempt the formulation of a report of progress of the program authorized by the Veterans Administration of securing graduate medical education for physician veterans acting as residents in approved hospitals A letter was sent on September 24 to the deans of the schools of medicine asking [illegible] to express themselves if they so chose concerning the success of the resident education program or phases of other education programs in medicine under the Veterans Administration

Thirty seven schools of medicine in the United States and five in Canada replied All the Canadian schools acknowledged the letter but recognized that the problem was one pertaining to the schools in the United States only

2 General Comments

It is obvious from the letters of the deans that the program of graduate education through residencies in hospitals for physician veterans is meeting the favor of the deans Sixteen schools explicitly stated that the plan is operating satisfactorily and seven others stated that the plan is regarded as satisfactory but is nevertheless deserving of some criticism Ten of the schools emphasized their adverse criticisms without expressing commendation and four schools stated that they had no program

The criticisms and suggestions which were received in the thirty seven letters might be grouped under five headings, criticism of (*a*) policies (*b*) the financial arrangements (*c*) entitlement of veterans to educational benefits (*d*) the personnel of the Veterans Administration and (*e*) procedures Under each of these five headings there is at least one outstanding common difficulty mention of which recurs in a number of the letters

With reference to policies it is pointed out by a majority of the writers of the letters that confusion exists concerning the interpretation of the law and of the regulations It is pointed out that in different sections of the country different interpretations prevail Apparently the local offices of the Veterans Administration are thought not to be in sufficiently close contact with the Washington office to ensure uniformity in policy making and uniformity in administration It would seem too that in at least 1 case which was discussed in detail, there is suspicion of broken faith, at least so the institution interprets the demand by the Veterans Administration for a renegotiated contract after the institution has committed itself to the expenditure of funds involving possibly a $25,000 deficit

With reference to the financial arrangements, the outstanding problem is the amount of the payment which is due to the school of medicine or to the university authorities as tuition for the resident veteran physicians Some of the schools are receiving $500 tuition but in all cases that have been revealed by the recent correspondence the residents are regarded as students in the university, sometimes under the graduate school and in other instances under the school of medicine, and the tuition is paid not so much for the residency as for the regular courses even though the education includes the usual functions and duties of the resident

There is a general demand in the correspondence for the authorization of a $500 tuition payment Perhaps this subcommittee should recommend to the Committee on Postwar Medical Service that, wherever possible, the resident should be registered in the graduate school or in the school of medicine in order that the Veterans Administration may be able to pay the $500 tuition to the institution without going through the elaborate formality of writing a contract, as is provided for in the present regulations

Growing out of this situation is the further one that in some areas the Veterans Administration has permitted the use of funds in an amount represented by the difference between the $500 per year maximal allowance and the $180 paid as tuition in whole or in part for the purchase of books, instruments and supplies Practices with reference to this are by no means uniform

With reference to entitlement, the central problem seems to be the interdependence of the subsistence allowance paid to the veteran physician and the tuition payment paid to the school or hospital When tuition payments and other school expenses exceed $500 a year, the veteran may choose to have all his school expenses defrayed by the Veterans Administration but in making that request he shortens the period of his entitlement and at the same time deprives himself of further subsistence Several of the letters regard this as a serious defect in the program

With reference to the personnel of the Veterans Administration, the complaint is made that serious difficulty has been encountered in dealing with the officials of the Veterans Administration, who are said at times not to understand educational terminology or many of the phases of school administration and particularly of the administration of schools of medicine Some of the deans complain that training officers are changed too frequently Scarcely have they succeeded in establishing relationships with one training officer before he is moved, and another must be trained

Complaints are rather general that the procedures of the Veterans Administration are unnecessarily involved that there is too much paper work too many blanks too many diverse interpretations of the same blank and, finally, that too long a time elapses between the filing of claims or bills and the payment made to the schools In this connection one serious difficulty is pointed out, namely, that the Veterans Administration pays only at the end of the semester and that the school's regulations regarding the prepayment of tuition at the beginning of the semester is not being carried out by the Veterans Administration

3 Criticisms and Suggestions

A Policies

1 Uniformity of policies is highly desirable throughout the country

2 Much confusion exists concerning diverse practices and policies

3 The Veterans Administration in some localities objects if charges are made against the Veterans Administration when no charges are assessed against civilian residents

4 The pressures against the hospitals from the residents the staff members, the Veterans Administration and the medical schools seem to have forced some hospitals into questionable misrepresentations of their programs

5 Interest in refresher courses is lagging Attention should now be directed to the attitudes five years hence when these physicians who have failed to take advantage of the educational opportunities of today will recognize their mistakes

6 If the Veterans Administration exposes itself to the charge of arbitrarily modifying or canceling contracts as seems to have happened in one instance it will seriously jeopardize the success of its own program

7 Hospitals which increased their number of residents to assist in what was represented as a national obligation now feel aggrieved, and many of them are in serious financial difficulties as the result

B FINANCIAL

8 The amount allotted to students and the universities or hospitals does not cover the expenses of the student nor of the educational institution

9 There is a fairly general demand that something should be done to secure a $500 tuition payment for each resident receiving his graduate education in a university hospital The Veterans Administration should be asked whether it cannot recognize all of these residents as graduate students in the university

10 The ceiling of $200 which in some localities is about to be established in accordance with new rulings will undoubtedly disrupt the plan now in operation The Veterans Administration must remember that physicians as a class are 10 years older than the average G I

C ENTITLEMENT

11 Dissatisfaction is growing concerning the procedure of shortening the period of entitlement if in any one year the student's expenses exceed $500

12 The provision that a school may not charge the veteran unless a similar charge is customarily made against other residents needs interpretation

D PERSONNEL

13 Difficulty has been encountered in fitting the terminology of the Veterans Administration's educational directives into the customary university and school of medicine patterns, in interpreting the differences between the various kinds of educational experiences in colleges, etc, as contrasted with those of a school of medicine, in interpreting the differences between the courses of the undergraduate curriculum and the courses of a resident program

14 The Veterans Administration program has had a serious effect on the psychology of the residents, making it difficult to reconcile the attitude of the veteran with that of the physician

15 The training officer is changed too frequently, making it impossible to establish consistent policies in the institution

E PROCEDURES

16 The delay in negotiations and the subsequent delay in securing payment has been very burdensome

17 The paper work to be done may be thought to be unavoidable by the Veterans Administration, but it is a source of resentment to some of the schools of medicine

18 There must be some way of simplifying procedures

19 Several of the blanks should be simplified and the whole series of blanks used by the Veterans Administration in dealing with the residents should be harmonized

20 Even after six or seven months of experience with residents, some hospitals have received no pay

21 The Veterans Administration's policy of paying tuition only at the end of the semester throws too much danger of a loss of tuition on the school The Veterans Administration should be held to observe the school's regulations concerning tuition payment

22 The interdependence of subsistence allowances and payments for educational costs may work serious and perhaps avoidable hardships either to the university or to the student in some cases

During the discussion it was brought out that the A S T P and V-12 student is not entitled to educational benefits under the G I bill, since he is not considered a veteran unless he has actually served with troops for a certain length of time ninety days' service outside the A S T P or V 12 It was stated that some students delayed their discharge and on their terminal leaves went with the troops, thus becoming entitled to G I benefits

The Chairman restated an amended motion that the Joint Committee commends in highest terms the efforts of the Subcommittee and particularly its chairman, Father Schwitalla, in formulating its report, and further instructs the subcommittee to proceed as may seem desirable in bringing this matter to the attention of the proper section of the Veterans Administration to the end that the whole situation may be clarified, and that Father Schwitalla be commended for his action at St Louis University School of Medicine, of which he is dean The motion was duly seconded and adopted unanimously

LICENSURE

Dr Bierring presented the following statement

In bringing the attention of the Committee on Postwar Medical Service to certain matters pertaining to the licensing of returning medical officers and relocation, there are two factors to be mentioned First is the feeling on the part of the officer that because of his experience he is entitled to certain privileges which in some instances are not reasonable and not permissible because of legal restrictions Secondly I think that in a general way boards of examiners have endeavored to be as liberal as possible

One difficulty giving great concern is the basic science examination There are now eighteen basic science boards, their original purpose was to determine whether or not a man had knowledge enough to be admitted to examination for the practice of the healing arts The basic science examination has gradually evolved into practically the same as that required in regular medical examinations The result is that there is a growing tendency for basic science boards to assume more importance in connection with the licensing of physicians The difficulty is that only four of the basic science boards have reciprocal agreements with one another Six accept the grades of the National Board of Medical Examiners two accept other grades or the grades of licensing boards or of any properly authorized examining board several require not only an average of 75 per cent but also a minimum grade of 75 per cent in each of the basic sciences concerned A committee composed of representatives of the Federation of State Medical Boards and of the basic science boards has been appointed and it is possible that that committee may be able to work out some solution

Graduates of unapproved schools constitute another difficulty—how to analyze the value of their military service The need of the community in which they wish to practice also enters into the picture The fact that the New York State Board of Medical Examiners has been accepting some of these graduates makes for confusion in reciprocity licensure

The foreign graduates are also a problem, especially the graduates of the extramural schools of Great Britain, not any of which are connected with the universities In 1939 most of the licensure agencies and also examining boards and the National Board of Medical Examiners took action that they would not accept for examination any person who enrolled in any of the extramural schools after July 1, 1939 About 300 were stranded in Great Britain at the beginning of World War II A considerable number who graduated before 1939 or were students in 1939 were admitted to examination in New York State, where there was a liberal tendency some years ago to admit foreign graduates to examination Now these men have had military service or are anxious to locate in some other state, and it is difficult for the examining boards to determine their eligibility At present representatives of the General Medical Council and the Council on Registration of the United Kingdom are visiting in the United States to consider this problem Other foreign medical graduates came from Italian schools Again, the New York state board permitted many of these to take the New York examination and admitted them to licensure Many have now had military experience and because they passed the New York state board and because of the need of the local community, many states have accepted them There is the same difficulty with respect to graduates of medical schools of Spain, particularly of Barcelona It is difficult to obtain any kind of records even of their graduation A conference of the various agencies concerned has been called to meet in February to decide the problem of the foreign medical graduates This whole matter is concerned with the need for physicians, particularly in rural areas

The Chairman thanked Dr Bierring for his report

SPECIALTY BOARD FOR GENERAL PRACTITIONERS

At the conclusion of his report, Dr Bierring raised the question, for discussion, of the future of the general practitioner He said The general practitioners perform 85 per cent of all the practice, something should be done to stimulate them with the same stimulus that is given to the specialists, if the needs of the rural physicians are to be met, something must be done to dignify them in some way or another, the American Medical Association has set up a special scientific section on general practice, why cannot there be a specialty board to give these men recognition as general practitioners? Their training should be commensurate with the part they play

Dr Kirklin explained that it is not the function of the Advisory Board for Medical Specialties to create new specialty boards but merely to accept applications and to advise Dr Henderson thought it might be a good thing if the Section on General Practice of the Scientific Assembly of the American Medical Association would present a resolution to the Association's House of Delegates urging that such a step be taken Dr Kirklin thought that the general practitioners should be given some such recognition, citing the fact that most hospitals are demanding certification of their staff members, which, having no certification of any kind tends to prohibit the general practitioner from doing surgery in the hospitals, which he feels he is qualified to do

Mention was made of the Indiana Board of General Practice of Medicine, recently established on authorization of the Indiana State Medical Association to grant and issue certificates of qualification to candidates successful in demonstrating their proficiency ' as general practitioners

Dr Bierring said that at one time the National Board of Medical Examiners had considered the advisability of the establishment of a specialty board but had decided there were too many difficulties involved He thought the National Board might now be more inclined to foster the matter

The Chairman asked Dr. Bierring, Dr. Kirklin and Dr. Sensenich to prepare a report on the subject for presentation at the next committee meeting.

ESTABLISHMENT OF MEDICAL CORPS IN VETERANS ADMINISTRATION

Father Schwitalla, chairman of the Subcommittee on Establishment of a Medical Corps in the Veterans Administration, asked Colonel Mella for a comment, and he made the following remarks:

> You probably all know that a bill was passed and signed by the President—Public Law 293 The Department of Medicine and Surgery has been organized under that law and is now operating There are still many phases to the reorganization which require further development, but definite progress has been made. The bill submitted did not pass in its original form It was necessary to accept certain modifications in order to get some sort of bill which would give the department a free hand in the selection of physicians, dentists and nurses, which we now have I would suggest that the Committee give consideration to the possibility of continuing the sub committee

RURAL MEDICAL SERVICE

In the absence of Dr. Crockett, the Chairman asked Mrs Shuler of the Association's staff, who has been assisting Dr. Crockett in the work of the Committee on Rural Medical Service, to tell the Committee something of the plans for the second National Conference on Rural Health, which is to be held in Chicago in February. Mrs Shuler gave a résumé of the proposed program for the conference, saying that it had been planned at a recent meeting between the Committee on Rural Medical Service and representatives of farm groups She further stated that it is hoped to have the conference as informal as possible

The Chairman thanked Mrs Shuler for her presentation and said the item would be on the agenda for the next meeting

INDUSTRIAL HEALTH

Dr Peterson spoke to the Committee as follows.

> The House of Delegates of the American Medical Association at San Francisco in July approved a proposal that the advancement of industrial health activity should be a cooperative affair between management, labor and medicine. This was considered at the Annual Congress on Industrial Health held a few days ago in Boston. One suggestion for its implementation was that a physician having the labor point of view might be included in the membership of the Council on Industrial Health Another suggestion was that some sort of Joint Conference Board be set up and on that board there be representation from management and labor groups Past experience leads us to feel that we can arrive at a satisfactory way of working out these matters There are areas of agreement rather than of disagreement. A third suggestion was that the Council become better informed regarding the actual medical services that are being formed and developed by the labor groups themselves. Some are doing good work, others not so good Our relations with management have always been cordial. Out of that has grown a practical problem in professional relations which has to do with the medical veterans' question as well Some of these men are attempting to set up services for small industrial plants. They are asking us "Assume that we set up a clinic or offices in an industrial area, what is the ethical position as to our soliciting industries in the area?" We took the position that they ought not to solicit, and the Judicial Council of the American Medical Association agreed. Now we are getting around to taking the position that, if agreeable to the county medical society concerned, the physicians can go out and let industries know that the services are available. If we do set up relations between management, labor and medicine, it will be difficult to hold the discussions to the realm of industrial disability What cooperative relationships should we set up within the Association itself when we begin to bring this procedure into effect?
>
> Another development of importance is the decision on the part of the Council on Medical Education and Hospitals to review graduate training in the field of industrial medicine. Efforts have been made to establish a certifying board, but one of the big obstacles is that we do not have an educational program comparable to what has been set up in the other special fields Advances have been made to the Council on Medical Education and Hospitals to see if we may not take a leaf out of the experience of the other specialty boards and set up a residency program Although it probably would be impossible to approve a department in an industrial plant as an educational institution, the apprenticeship experience should be had in an industrial medical department

Dr. Bierring asked if the creation of a certification board would not be furthered by the establishment of schools of industrial health and in that way a form of specialist service would be developed and standards set. Dr. Johnson thought the people in industrial medicine are proceeding wisely, and Dr. Kirklin said that application for a certifying board has been made.

Father Schwitalla asked if the Student Health Association had not tried to set up a residency in student health services as a part of the residency in internal medicine and was informed—and most of the members agreed—that that had been discussed by the American Board of Internal Medicine but, because of the quality of procedures in most student health departments in universities and schools, it was felt that such action was unwarranted

Dr. Peterson's statement was received with appreciation

PHYSICAL FITNESS

The Chairman introduced Dr Dean F. Smiley and Mr Fred V Hein, who have recently been added to the staff of the Bureau of Health Education of the American Medical Association to conduct a Health and Physical Fitness Project under the supervision of the Association's Committee on Health and Physical Fitness. In his introduction the Chairman stated that by including this project in the total health education program of the Association and staffing it with a physician who has had wide experience in health education and an educator experienced in the health and physical education fields it is given a permanence and *practicability lacking in* the previous organization

Dr. Smiley presented the following:

> The Health and Physical Fitness Project will include the health and fitness problems of the preschool child, the school child, the college student, the adult, both rural and urban, and the industrial worker. Though the committee contemplates cooperation with all other health agencies working toward health improvement in home, school, industry and community, it has expressed the belief that it is first in the schools and second in industry that the most immediate and most practical approach to the problem lies. No attempt will be made to set up any master plans or "ideal" health programs and then to procure their widespread adoption in schools and industries of all types and sizes. Rather it is the plan to accumulate source files on the varied health programs now in use with the purpose of making both reports on these programs and the advice and counsel of Mr. Hein and myself available on invitation to boards of health, boards of education, employers, employee groups, medical societies and women's organizations
>
> This project is in a sense a continuation of the work carried on by the American Medical Association in conjunction with government agencies and other interested groups during the late war

Mr. Hein gave further information on the project, as follows:

> On September 17 Dr. Smiley and I met with the Committee on Physical Fitness, which more or less outlined the things it would like to have done We have gone ahead with that plan The approach which seemed most logical was primarily through the schools, at the secondary and elementary levels particularly. We have begun a source file, have drawn on the resources of the previous committee and are gathering additional material The first series of thirteen electrical transcriptions on physical fitness will shortly be ready Visits for consultation with educational and medical groups have been arranged A television program is contemplated We hope to expand the program greatly as time goes on.

The Chairman asked Dr. Smiley and Mr. Hein to be present at the next meeting and give a further report

AUTOMOBILE PRIORITIES FOR PHYSICIANS

The Chairman presented a resolution on automobile priorities for physicians, which had been referred to the Committee on Postwar Medical Service by the House of Delegates of the American Medical Association He said that the House of Delegates had approved the resolutions in principle. After extended discussion the matter was laid on the table.

CORRESPONDENCE

Dr Shoulders said he had received a number of letters from men in the regular Navy Medical Corps who have not been allowed to resign. It appears, he said, that most such men had taken their intern training as members of the Reserve Corps and, on completing it, had been offered commissions in the regular Navy with the assurance that they would be allowed to resign on the same basis as the Reserve Corps but actually were not allowed that privilege He asked Captain Eaton to explain the matter, if possible, so that he might reply to such communications correctly.

Captain Eaton replied as follows: The Navy now has 3,700 doctors, of whom 1,900 are members of the regular Navy Medical Corps. Something over 4,000 are needed—between 4,200 and 4,500. At present there are approximately 500 at sea and about 800 at overseas bases, and there are 2,400 in the continental limits. There are about thirty-six or thirty-seven hospitals in operation and about 27,000 patients overseas and at home. Those men who were in the V-12 program and got their medical education thereby are being retained for about two years after they have completed their internship and are ready for service. A sincere attempt was made to get some of the Reserve officers, the younger men, to transfer to the regular Navy, but it was not very successful. Most of those who transferred were older men who did not want to go back to private practice. Many of them were rather well qualified men whom we could use in the residency and intern training program to advantage. The problem has been very difficult for the Bureau of Medicine and Surgery to handle, trying to maintain enough Navy medical officers to carry on the work. As I have said, there are 1,900 regular Medical Corps officers altogether; the number of regular officers required by the Navy was set at 4,500, 2,500 lacking. In the endeavor to get men who had been in service to fill up this vacancy, the Bureau wrote letters such as those presented by Dr. Shoulders. There now is a law authorizing the transfer of officers from the Reserve into the regular Navy; when the letters were written, there was no such law. Now a Reserve officer can be transferred to the regular Navy by applying and, if the Bureau and the Surgeon General consider him qualified, he is commissioned. I think the only thing that can be said in reply to such communications is that as an officer of the regular service, the policy of the Navy Department today is that resignations will not be accepted until such time as the officer's services are no longer required to meet the emergency. Reserves ordinarily do not resign; they are placed on inactive status. A man in the regular service has signed an oath to stay, and he has to conform to the policy of the Navy Department.

Dr. Draper said: The Public Health Service established a point system whereby they would release Reserve officers, but it did not apply to the regular officers; in the course of time the regular officers became dissatisfied, and they are now on the same basis; that resulted in the loss of approximately 100 regular officers from July 1 to September 1; unlike the Navy, the Public Health Service does have some work not concerned with the actual care of patients, and its effort was to contract in certain lines and to close some hospitals.

In reply to a question by Dr. Shoulders, Captain Eaton said he understood that a fairly satisfactory number of applicants for commissions in the regular Navy Medical Corps are being received.

COMMUNICATION FROM MISS SWITZER

The Chairman read a letter received from Miss Mary Switzer, liaison member of the Committee representing the Federal Security Agency, as follows:

> One of the problems which has come to my attention in the last couple of months since the last meeting of the Committee is the difficulty that young men coming back from service are having in securing staff appointments to hospitals. You may remember that our committee touched on this subject once or twice within the last year. I believe it was brought out that the pressure for hospital beds is so great in many communities that one has to be on the staff of a hospital to get a patient into one. This naturally makes the men on the staff reluctant to extend staff facilities to more physicians than the bed capacity warrants.
>
> I can see that it is a vicious circle, but I think we should also be aware that the men coming back from overseas, particularly the younger ones who have not had an opportunity to make their connections, could become very discouraged, if not bitter, if this situation is allowed to become acute.
>
> I wonder if you could bring this up before the Committee and see whether other members have had evidences of this situation and whether any suggestions can be made to ease the strain. It is particularly acute in some of our smaller cities. I am not sure whether it is so serious in large ones, although I believe Chicago is one of the places from which complaints have come to me.

The Chairman was of the opinion that this committee could do little to remedy the situation except perhaps to urge the hospitals to consider the needs of the veteran physicians.

DATA ON ARMY SEPARATIONS

Colonel Voegtly presented the following figures on army separations as of Oct. 5, 1946:

Medical Corps	260	Total separated	44,749
Dental Corps	82	" "	13,346
Nurse Corps	111	" "	48,470

TIME AND PLACE OF NEXT MEETING

It was decided that the next meeting, which will be the first meeting as the Joint Committee for the Coordination of Medical Activities, will be held at American Medical Association Headquarters in Chicago on Jan. 11, 1947.

Official Notes

ATLANTIC CITY SESSION

Scientific Exhibit—Applications Close January 13

Applications for space in the Scientific Exhibit at the Atlantic City Session close on Jan. 13, 1947. Prospective exhibitors are urged to submit their applications for space immediately, since applications received after the closing date are placed on the waiting list to be considered only if space becomes available. Applications for a place on the motion picture program in the Scientific Exhibit do not close until February 15, but those applications should be submitted as early as possible also.

Application blanks may be obtained from the section representatives or from the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago 10.

DEATH OF CHARLES MOHLER

Mr. Charles S. Mohler, Assistant Business Manager of the American Medical Association, died Dec. 23, 1946 in a hospital in Elkhart, Ind., following an automobile accident which occurred two days previously. Mr. Mohler had been employed at Association headquarters in Chicago for about thirty years.

Washington Letter

(From a Special Correspondent)

Dec. 23, 1946.

Public Health Service Seeks New Medical Research Center

The 80th Congress, which will convene on January 3, will be asked by the U. S. Public Health Service for funds to establish an extensive new medical research center as part of the National Institute of Health in Bethesda, Md. Included in the 15 to 20 million dollar center would be a two hundred to three hundred bed hospital for clinical study and treatment of cancer patients. A similar section would be devoted to the study of aged patients and those with heart diseases. The service also plans to ask Congress to appropriate more than $5,000,000 for the expansion of clinical and laboratory cancer research. The total appropriation at present is $1,772,000. Most general hospitals now function as treatment centers and have few facilities for research, while the National Institute of Cancer must confine its work to research and send scientists to other hospitals for clinical work, it was explained.

Hawley Stresses Need of Private Hospitals in Veteran Care Program

Major Gen. Paul R. Hawley, medical director of the Veterans Administration, told a luncheon club here that the American people must decide if the agency is to give complete medical care to all veterans. He explained that the present medical care program is primarily for those with service connected disabilities but that vacant beds in veterans' hospitals may be occupied by veterans with non-service connected ailments, provided the veteran is not financially able to pay for private medical care. If the Veterans Administration medical service is to apply to all veterans for any disabilities, General Hawley said that the agency's medical department will have to be revised and greater use will have to be made of private hospitals. He explained that such a medical program could "never succeed under a full time medical service in government hospitals—it can only be kept at a proper standard through the use of the best private hospitals in the country." Veterans Administrator Omar N. Bradley has ordered a radical change in long-standing policy to provide more hospital beds for veterans. Henceforth, non-service connected patients with diseases or disabilities requiring medical treatment rather than hospital care will be placed "on leave" from the hospital and thereafter given what amounts to outpatient care. Savings in the patients' time and hospital bed space is expected to be considerable, under the new policy, in cases of heart conditions, arthritis, cancer, diabetes, skin infections and dental care.

Treatment of Leprosy

The Advisory Committee on Leprosy in the United States met at the U. S. Public Health Service Building here in an all-day session and heard reports on current methods of treatment and control of leprosy or Hansen's disease. Officials reported that a sulfonamide drug, Promin (sodium p,p′diaminodiphenylsulfone-N,N′-didextrose sulfonate) has been used successfully at the National Leprosarium at Carville, La., in arresting the disease. Thirty-eight per cent of 137 patients treated with the drug during two years showed a reversal from positive to negative in bacteriologic tests. Other sulfonamide drugs, Promizole (4,2′-diaminophyl-5′-thiazolylsulfone) and diasone (disodium formaldehyde sulfoxylate diaminodiphenylsulfone), are said to have shown promise. Dr. Thomas Parran, Surgeon General of the service, revealed that the disease occurs mainly in the Gulf Coast states and is "a public health problem of continuing importance."

One Hundred and Twenty-Five Army Medical Officers to Be Released to U. S. Public Health Service

The War Department has announced that one hundred and twenty-five Army medical officers who are not classified as specialists may apply to serve their active duty as members of the U. S. Public Health Service. The action was taken to assist the public health service through a "difficult period," it was explained. Regular Army officers, those listed as specialists, and physicians who have volunteered to serve as long as twenty-four months are excluded from the transfer. The department also reminded wartime officers who have returned to civilian life that December 31 is the closing date for applications for Regular Army commissions.

Commentators Fear Production of Motion Pictures Glamorizing Use of Drugs

Fears that relaxation of the code of the Bureau of Narcotics to permit the making of films depicting drug addiction would result in a cycle of movies with drug traffic plots were expressed by the Catholic National Legion of Decency and others here. The code was amended to read: "Illegal drug traffic must not be portrayed in such a way as to stimulate either curiosity or interest concerning the use of, or traffic in such drugs, nor shall scenes be approved which show the use of illegal drugs or their effects in detail." The Legion of Decency stated that this provision "in effect opens the door for the production" of drugs films, and "reports indicate that several companies are planning 'dope' production."

Walter Reed Patients View Film Depicting Home-Coming Problems of Amputee

A former Walter Reed patient, Harold Russell of Cambridge, Mass., was one of the stars of a new Goldwyn film, "The Best Years of Our Lives," depicting home-coming problems of veterans, one an amputee, which was screened for other patients at the hospital. The only previous showing was to General Eisenhower and War Department and Veterans Administration officials.

National Committee for Employment of Handicapped

Major Gen. Erskine, M. C., U. S. Army, was elected chairman of a permanent National Committee for Employment of the Handicapped at a meeting held in the Smithsonian Institution and attended by representatives of over one hundred groups. More than three hundred organizations will participate in the committee, which will seek to promote employment of both civilian and veteran handicapped through a national educational program.

Council on Medical Service

MEDICAL CARE PLAN NEWS

Louisiana Physicians Service, Inc., the prepayment surgical and obstetric care plan sponsored and approved by the Louisiana State Medical Society, reported encouraging enrolment results in its first month of active enrolment. During the month of November, 1,567 certificates were issued covering in excess of 4,850 persons. The enrolment figures are reported from three of the four branch offices in operation in November.

The home office of the company is at 1430 Tulane Avenue in New Orleans. Branch offices are operating in the cities of Baton Rouge, Alexandria, Shreveport and Monroe. Blue Cross hospitalization enrolment facilities are used in the first two branch offices, and facilities of an independent nonprofit hospitalization group are used in the latter offices.

The plan was incorporated on Aug. 18, 1946 under the Industrial Insurance Laws of the State of Louisiana (particularly act 148 of 1936, as amended) as a mutual nonprofit insurance company. The company received its Certificate of Authority to operate in Louisiana on Sept. 30, 1946.

A surgical benefit certificate is issued to each subscriber providing an indemnity coverage to each enrolled person for surgical and obstetric care, including treatment of fractures and dislocations, and also provides for coverage for certain related benefits for diagnostic x-ray, anesthesia and laboratory service.

The plan is in the process of enrolling a panel of participating physicians who will accept the indemnity as provided in the Schedule of Benefits as full payment for service for persons whose annual income is less than $2,000, if single, and for the family group whose aggregate annual income is less than $3,000. Approximately 30 per cent of the physicians in Louisiana have enrolled as participants in the plan with the area of Shreveport reporting approximately 65 per cent of the physicians participating. Physician participation is increasing daily.

The plan is doctor controlled, having a board of directors of ten physicians and one lay member. Directors are chosen from a board of trustees selected by the Louisiana State Medical Society. The plan also bears the endorsement of the Council on Medical Service of the Louisiana State Medical Society. Officers of the company are O. B. Owens, M.D., Alexandria, president; William L. Bendel, M.D., Monroe, vice president; H. Whitney Boggs, M.D., Shreveport, secretary-treasurer, and Frank Lais Jr., New Orleans, executive director.

Coming Medical Meetings

Annual Congress on Medical Education and Licensure, Chicago, Palmer House, Feb. 10-11. Dr. Victor Johnson, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Orthopedic Surgeons, Chicago, Jan. 25-30. Dr. Myron O. Henry, 825 Nicollet Ave., Minneapolis, Secretary.

Central Surgical Association, Chicago, Feb. 20-22. Dr. Walter G. Maddock, 250 East Superior St., Chicago, Secretary.

Mid-South Postgraduate Medical Assembly, Memphis, Tenn., Feb. 11-14. Dr. Arthur F. Cooper, 1479 Carr Ave., Memphis, Secretary.

New Orleans Graduate Medical Assembly, New Orleans, Feb. 24-27. Dr. Max M. Green, 1430 Tulane Avenue, New Orleans 13, Secretary,

Pacific Coast Surgical Association, Seattle, Feb. 17-18; Victoria, B. C., Feb. 19-21. Dr. F. L. Reichert, Stanford University Hospital, San Francisco, Secretary.

Southeastern Allergy Association, Atlanta, Ga., Jan. 18-19. Dr. Katharine B. MacInnis, 1515 Bull St., Columbia 49, S. C., Secretary.

GOVERNMENT SERVICES

ARMY

MEDICAL BUILDING PROGRAM FOR 1947

The War Department has authorized army engineers to initiate the fiscal year 1947 army construction program for the continental United States at a total estimated cost of $60 069,752 This program has received approval of the Office of War Mobilization and Reconversion The housing program accounts for $41,329,500 of the total

The Army s construction program for the Medical Department is as follows

Percy Jones General Hospital, Battle Creek, Mich , thirty-six housing conversions and elevator repairs, $100 000 , physical therapy facilities, $2 500

Letterman General Hospital, San Francisco, twelve housing conversions

Fitzsimons General Hospital, Denver, twenty housing conversions

Madigan General Hospital, Tacoma, Wash , twelve housing conversions

William Beaumont General Hospital, El Paso, Texas, twenty-eight temporary housing units

Oliver General Hospital, Augusta, Ga , conversion of wards for care of neuropsychiatric patients, $287,000

Fort Totten, New York, establishment of medical laboratory, $200 000

Walter Reed General Hospital, Washington, D C , eight temporary housing units, postoperative recovery ward, $70,590

FOOD SERVICE SUPERVISORS

A new category of thoroughly trained army staff officers whose sole duty will be the supervision and direction of the food program of their command has been established, the War Department has announced The special food officers, to be known as 'food service supervisors," will be assigned to army commanders at all echelons from battalion to overseas theater and will range in rank from first lieutenant to lieutenant colonel Simultaneously a new class of enlisted personnel to be known as food service technicians" and ranging in rank from corporal to master sergeant has been established These new categories will not increase the authorized basic troop strengths Their objective is to improve the standards of the army subsistence program as recommended by a nine man committee of civilian experts In general the food service supervisors will closely watch the food program of their organization always with the view toward improvement of service, health of the men, variety and elimination of unnecessary waste

Officers selected for the duty will have a thorough knowledge of procurement, storage distribution, preparation and service of food Enlisted personnel selected for assignment as food service technicians must also meet high standards In general they must be high school graduates or equivalent, and meet high mental, health and training requirements

ANNUAL PHYSICAL EXAMINATIONS

The annual physical examination for regular army officers, reestablished for 1947, has been expanded to include all officer personnel of the Army nurses, ward officers, warrant officers and flight officers, as well as retired officers on active duty The War Department circular points out that certain categories of officers are not required to take the examination, including those who undergo a final type examination subsequent to Oct 1 1946 in conjunction with integration into the regular Army.

ARMY AWARDS AND COMMENDATIONS

Colonel Austin J. Canning

The Oak Leaf Cluster to the Legion of Merit was recently awarded to Col Austin J Canning of Bethlehem, Pa The citation stated that during the war Colonel Canning organized and operated Rhoads General Hospital, Utica, N Y , to provide the highest quality of medical care Through outstanding ingenuity he considerably increased the hospital's bed capacity and to combat shortages in medical department personnel, explored, promoted and trained volunteer women's units He supervised the training of numerous medical units, inspiring them by example to devotion to the welfare of the sick and wounded Dr Canning graduated from the University of Pennsylvania School of Medicine in 1911 and entered the service May 15, 1914

Colonel Aubrey K Brown

The Legion of Merit was recently awarded to Col Aubrey K Brown, M C U S Army, of Fort Moultrie South Carolina As stated in the citation, he displayed outstanding professional and administrative ability as commanding officer Regional Hospital, Camp Swift, Texas, from March 1942 to November 1945 The reconditioning program for return to duty or civil status of convalescent soldiers and the program of training for medical units for oversea service organized and supervised by Colonel Brown, were particularly valuable and reflected his keen devotion to the welfare of the sick and wounded Dr Brown graduated from Bennett College of Eclectic Medicine and Surgery, Chicago, in 1912 and entered the service July 1, 1920

Major Andrew J Brislen

The Army Commendation Ribbon was recently awarded to Major Andrew J Brislen, M C , A U S , of Chicago the authorization stating in part, for your high degree of professional ability displayed in your capacity as chief of the general medical branch of the medical division at the AAF Regional and Convalescent Hospital, Coral Gables, Florida, for the year 1945 Not only did you do a superior job as chief of the general medical branch of the medical service but through your devotion to duty, loyalty, industry and ingenuity you organized and administered the procedure in the hospital for medical discharges for enlisted men You put this system into effect and personally supervised it up to the time after VJ day when the patient load in the convalescent services was reduced to a few hundred Through the use of this system and through your personal efforts in coordination with the personnel office the medical boards and the professional services of this hospital were able to save for the government thousands of needless patient days in the hospital, thereby reducing the noneffective rates of organizations serviced by the hospital" Dr Brislen graduated from the University of Chicago School of Medicine and entered the service Nov 14, 1942

Captain Saul Steinberg

The Army Commendation Ribbon was recently awarded to Capt Saul Steinberg M C A U S , of Norristown, Pa, for meritorious service as venereal disease control officer, Camp Carson Colorado, from 1942 to 1944 With an average military strength of 15,000 to 20,000 men at Camp Carson his efforts, which necessitated working many off duty hours, resulted in a very low venereal disease rate at that camp The citation adds that he displayed exceptional ability and outstanding judgment and industry in the coordination and operation of the venereal disease program, in the establishment and effecting of highly beneficial programs and procedures, and in enthusiastic, tireless devotion to the best interests of personnel and patients Dr Steinberg graduated from Jefferson Medical College of Philadelphia and entered the service May 7, 1943 eran is not financially able to pay for private medical care If the Veterans Administration medical service is to apply to all veterans for any disabilities, General Hawley said that the agency's medical department will have to be revised and greater use will have to be made of private hospitals He explained that such a medical program could "never succeed under a full time medical service in government hospitals—it can only be kept at a proper standard through the use of the best private hospitals in the country" Veterans Administrator Omar N Bradley has ordered a radical change in long standing policy to provide more hospital beds for veterans Henceforth non service connected patients with diseases or disabilities requiring medical treatment rather than hospital care will be placed 'on leave' from the hospital and thereafter given what amounts to outpatient care Savings in the patients' time and hospital bed space is expected to be considerable, under the new policy, in cases of heart conditions, arthritis, cancer, diabetes, skin infections and dental care

Treatment of Leprosy

The Advisory Committee on Leprosy in the United States met at the U S Public Health Service Building here in an all-day session and heard reports on current methods of treatment and control of leprosy or Hansen's disease Officials reported that a sulfonamide drug, Promin (sodium p p'diaminodiphenylsulfone N N'-didextrose sulfonate) has been used successfully at the National Leprosarium at Carville, La, in arresting the disease Thirty-eight per cent of 137 patients treated with the drug during two years showed a reversal from positive to negative in bacteriologic tests Other sulfonamide drugs Promizole (4 2'-diaminophyl 5'-thiazolylsulfone) and diasone (disodium formaldehyde sulfoxylate diaminodiphenylsulfone) are said to have shown promise Dr Thomas Parran Surgeon General of the service, revealed that the disease occurs mainly in the Gulf Coast states and is "a public health problem of continuing importance

One Hundred and Twenty-Five Army Medical Officers to Be Released to U. S. Public Health Service

The War Department has announced that one hundred and twenty five Army medical officers who are not classified as specialists may apply to serve their active duty as members of the U S Public Health Service The action was taken to assist the public health service through a difficult period' it was explained Regular Army officers those listed as specialists and physicians who have volunteered to serve as long as twenty four months are excluded from the transfer The department also reminded wartime officers who have returned to civilian life that December 31 is the closing date for applications for Regular Army commissions

Commentators Fear Production of Motion Pictures Glamorizing Use of Drugs

Fears that relaxation of the code of the Bureau of Narcotics to permit the making of films depicting drug addiction would result in a cycle of movies with drug traffic plots were expressed by the Catholic National Legion of Decency and others here The code was amended to read 'Illegal drug traffic must not be portrayed in such a way as to stimulate either curiosity or interest concerning the use of or traffic in such drugs, nor shall scenes be approved which show the use of illegal drugs or their effects in detail The Legion of Decency stated that this provision in effect opens the door for the production" of drugs films and "reports indicate that several companies are planning dope' production"

Walter Reed Patients View Film Depicting Home-Coming Problems of Amputee

A former Walter Reed patient, Harold Russell of Cambridge, Mass, was one of the stars of a new Goldwyn film, "The Best Years of Our Lives depicting home coming problems of veterans one an amputee, which was screened for other patients at the hospital The only previous showing was to General Eisenhower and War Department and Veterans Administration officials

National Committee for Employment of Handicapped

Major Gen Erskine, M C U S Army, was elected chairman of a permanent National Committee for Employment of the Handicapped at a meeting held in the Smithsonian Institution and attended by representatives of over one hundred groups More than three hundred organizations will participate in the committee, which will seek to promote employment of both civilian and veteran handicapped through a national educational program

Council on Medical Service

MEDICAL CARE PLAN NEWS

Louisiana Physicians Service, Inc, the prepayment surgical and obstetric care plan sponsored and approved by the Louisiana State Medical Society, reported encouraging enrolment results in its first month of active enrolment During the month of November, 1,567 certificates were issued covering in excess of 4 850 persons The enrolment figures are reported from three of the four branch offices in operation in November

The home office of the company is at 1430 Tulane Avenue in New Orleans Branch offices are operating in the cities of Baton Rouge, Alexandria, Shreveport and Monroe Blue Cross hospitalization enrolment facilities are used in the first two branch offices, and facilities of an independent nonprofit hospitalization group are used in the latter offices

The plan was incorporated on Aug 18 1946 under the Industrial Insurance Laws of the State of Louisiana (particularly act 148 of 1936 as amended) as a mutual nonprofit insurance company The company received its Certificate of Authority to operate in Louisiana on Sept 30, 1946

A surgical benefit certificate is issued to each subscriber providing an indemnity coverage to each enrolled person for surgical and obstetric care, including treatment of fractures and dislocations, and also provides for coverage for certain related benefits for diagnostic x ray, anesthesia and laboratory service

The plan is in the process of enrolling a panel of participating physicians who will accept the indemnity as provided in the Schedule of Benefits as full payment for service for persons whose annual income is less than $2 000, if single, and for the family group whose aggregate annual income is less than $3 000 Approximately 30 per cent of the physicians in Louisiana have enrolled as participants in the plan with the area of Shreveport reporting approximately 65 per cent of the physicians participating Physician participation is increasing daily

The plan is doctor controlled, having a board of directors of ten physicians and one lay member Directors are chosen from a board of trustees selected by the Louisiana State Medical Society The plan also bears the endorsement of the Council on Medical Service of the Louisiana State Medical Society Officers of the company are O B Owens, M D, Alexandria, president, William L Bendel, M D, Monroe vice president, H Whitney Boggs, M D, Shreveport, secretary-treasurer, and Frank Lais Jr, New Orleans, executive director

Coming Medical Meetings

Annual Congress on Medical Education and Licensure Chicago Palmer House, Feb 10 11 Dr Victor Johnson 535 N Dearborn St, Chicago 10 Secretary

American Academy of Orthopedic Surgeons Chicago Jan 25 30 Dr Myron O Henry, 825 Nicollet Ave Minneapolis, Secretary

Central Surgical Association Chicago Feb 20 22 Dr Walter G Maddock 250 East Superior St Chicago Secretary

Mid South Postgraduate Medical Assembly, Memphis, Tenn, Feb 11 14 Dr Arthur I Cooper, 1479 Carr Ave, Memphis Secretary

New Orleans Graduate Medical Assembly, New Orleans Feb 24 27 Dr Max M Green 1430 Tulane Avenue New Orleans 13, Secretary

Pacific Coast Surgical Association Seattle, Feb 17 18, Victoria, B C, Feb 19 21 Dr I L Reichert, Stanford University Hospital, San Francisco, Secretary

Southeastern Allergy Association, Atlanta, Ga, Jan 18 19 Dr Katharine B MacInnis, 1515 Bull St, Columbia 49, S C, Secretary.

GOVERNMENT SERVICES

ARMY

MEDICAL BUILDING PROGRAM FOR 1947

The War Department has authorized army engineers to initiate the fiscal year 1947 army construction program for the continental United States at a total estimated cost of $60,069,752 This program has received approval of the Office of War Mobilization and Reconversion The housing program accounts for $41,329,500 of the total

The Army's construction program for the Medical Department is as follows

Percy Jones General Hospital, Battle Creek, Mich, thirty-six housing conversions and elevator repairs, $100 000, physical therapy facilities, $2,500

Letterman General Hospital, San Francisco, twelve housing conversions

Fitzsimons General Hospital, Denver, twenty housing conversions

Madigan General Hospital, Tacoma, Wash, twelve housing conversions

William Beaumont General Hospital, El Paso, Texas, twenty-eight temporary housing units

Oliver General Hospital, Augusta, Ga, conversion of wards for care of neuropsychiatric patients, $287,000

Fort Totten, New York, establishment of medical laboratory, $200 000

Walter Reed General Hospital, Washington, D C, eight temporary housing units, postoperative recovery ward, $70,590

FOOD SERVICE SUPERVISORS

A new category of thoroughly trained army staff officers whose sole duty will be the supervision and direction of the food program of their command has been established, the War Department has announced The special food officers, to be known as 'food service supervisors," will be assigned to army commanders at all echelons from battalion to overseas theater and will range in rank from first lieutenant to lieutenant colonel Simultaneously a new class of enlisted personnel to be known as "food service technicians" and ranging in rank from corporal to master sergeant has been established These new categories will not increase the authorized basic troop strengths Their objective is to improve the standards of the army subsistence program as recommended by a nine man committee of civilian experts In general the food service supervisors will closely watch the food program of their organization always with the view toward improvement of service, health of the men, variety and elimination of unnecessary waste

Officers selected for the duty will have a thorough knowledge of procurement, storage, distribution, preparation and service of food. Enlisted personnel selected for assignment as food service technicians must also meet high standards In general they must be high school graduates or equivalent, and meet high mental, health and training requirements

ANNUAL PHYSICAL EXAMINATIONS

The annual physical examination for regular army officers, reestablished for 1947, has been expanded to include all officer personnel of the Army nurses, ward officers, warrant officers and flight officers, as well as retired officers on active duty The War Department circular points out that certain categories of officers are not required to take the examination, including those who undergo a final type examination subsequent to Oct 1 1946 in conjunction with integration into the regular Army.

ARMY AWARDS AND COMMENDATIONS

Colonel Austin J. Canning

The Oak Leaf Cluster to the Legion of Merit was recently awarded to Col Austin J Canning of Bethlehem, Pa The citation stated that during the war Colonel Canning organized and operated Rhoads General Hospital, Utica, N Y, to provide the highest quality of medical care Through outstanding ingenuity he considerably increased the hospital's bed capacity and to combat shortages in medical department personnel, explored, promoted and trained volunteer women's units He supervised the training of numerous medical units, inspiring them by example to devotion to the welfare of the sick and wounded Dr Canning graduated from the University of Pennsylvania School of Medicine in 1911 and entered the service May 15, 1914

Colonel Aubrey K. Brown

The Legion of Merit was recently awarded to Col Aubrey K Brown, M C, U S Army, of Fort Moultrie, South Carolina As stated in the citation, he displayed outstanding professional and administrative ability as commanding officer, Regional Hospital, Camp Swift, Texas, from March 1942 to November 1945 The reconditioning program for return to duty or civil status of convalescent soldiers and the program of training for medical units for oversea service, organized and supervised by Colonel Brown, were particularly valuable and reflected his keen devotion to the welfare of the sick and wounded Dr Brown graduated from Bennett College of Eclectic Medicine and Surgery, Chicago, in 1912 and entered the service July 1, 1920

Major Andrew J. Brislen

The Army Commendation Ribbon was recently awarded to Major Andrew J Brislen, M C, A U S, of Chicago the authorization stating, in part, "for your high degree of professional ability displayed in your capacity as chief of the general medical branch of the medical division at the AAF Regional and Convalescent Hospital, Coral Gables, Florida, for the year 1945 Not only did you do a superior job as chief of the general medical branch of the medical service but through your devotion to duty, loyalty, industry and ingenuity you organized and administered the procedure in the hospital for medical discharges for enlisted men You put this system into effect and personally supervised it up to the time after VJ day when the patient load in the convalescent services was reduced to a few hundred Through the use of this system and through your personal efforts in coordination with the personnel office the medical boards and the professional services of this hospital were able to save for the government thousands of needless patient days in the hospital, thereby reducing the noneffective rates of organizations serviced by the hospital" Dr Brislen graduated from the University of Chicago School of Medicine and entered the service Nov 14, 1942

Captain Saul Steinberg

The Army Commendation Ribbon was recently awarded to Capt Saul Steinberg, M C, A U S, of Norristown, Pa, for meritorious service as venereal disease control officer, Camp Carson, Colorado, from 1942 to 1944 With an average military strength of 15,000 to 20,000 men at Camp Carson his efforts, which necessitated working many off duty hours, resulted in a very low venereal disease rate at that camp The citation adds that he displayed exceptional ability and outstanding judgment and industry in the coordination and operation of the venereal disease program, in the establishment and effecting of highly beneficial programs and procedures, and in enthusiastic, tireless devotion to the best interests of personnel and patients Dr Steinberg graduated from Jefferson Medical College of Philadelphia and entered the service May 7, 1943

NAVY

EXAMINATIONS FOR MEDICAL CORPS OFFICERS

The Bureau of Medicine and Surgery announces that examinations for the selection of candidates for appointment to the Navy Medical Corps will be held on Feb. 3-7, 1947, when boards of examiners will conduct physical and professional examinations for eligible candidates at twenty naval hospitals throughout the country. Those selected may be appointed to the grades of Assistant Surgeon or Acting Assistant Surgeon with the rank of Lieutenant (junior grade). Candidates must be citizens of the United States, between the ages of 21 and 32 (upper age level 31 for Acting Assistant Surgeons), must be graduates of approved medical schools and meet the physical requirements for appointment. Graduates of approved medical schools in the United States or Canada who have completed internship in accredited hospitals are eligible to take the examination for Assistant Surgeon. Those selected, following confirmation by the Senate, will be appointed and receive orders assigning them to a naval medical facility for active duty.

All students enrolled in approved medical schools who will have completed the third year of their medical course prior to date of the examinations are eligible to take the examinations for Acting Assistant Surgeon. On receipt by the Navy Department of certification that the candidate has satisfactorily completed his medical education, those selected will be appointed Acting Assistant Surgeons and issued active duty orders to naval hospitals for intern training.

Detailed information as to form and procedure of application may be obtained from the Offices of Naval Officer Procurement or from the Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C.

LECTURE BY DR. CRILE

Dr. George Crile Jr. of Cleveland, Ohio, was the guest lecturer, December 12, at the National Naval Medical Center, Bethesda, Md. This is the third in a series of lectures sponsored by the Naval Medical School. Rear Admiral Clifford A. Swanson, Surgeon General of the Navy, introduced Dr. Crile, who discussed "Nutrition, Fluid and Electrolyte Balance for the Postoperative Patient."

NAVY AWARDS AND COMMENDATIONS

Lieutenant Andrew F. LoPinto

The Navy Commendation Ribbon was recently awarded to Lieut. Andrew F. LoPinto (MC), U.S.N., of South San Francisco, Calif., "for excellent service in the line of his profession and duty as junior medical officer aboard the U. S. S. *Ormsby* (APA-49) from Feb. 1, 1944 to Nov. 15, 1944 during the amphibious assaults and capture of Kwajalein, Aitope, Guam, Pelelien and Leyte." The citation mentions Lieutenant LoPinto's consistent display of "exceptional leadership in the organization of the medical department personnel and the highest professional skill in meeting unique problems in surgery. His devotion to duty during the assault on Guam, when he attended to the wounded continuously for seventy-two hours without rest or sleep, saved many valuable lives. His conduct and accomplishments under hazardous combat conditions were in keeping with the highest traditions of the United States Naval Service." Dr. LoPinto graduated from the University of Southern California Medical School in 1942 and entered the service in August of that year.

MISCELLANEOUS

SPECIALISTS WANTED FOR GOVERNMENT POSITIONS

The U. S. Civil Service Commission has announced an examination to fill high grade positions in various medical fields. These positions are located in Washington, D. C., and vicinity. The positions are Specialist in Epidemiology (War Department), Specialist in Pathology and Specialist in Bacteriology (Army Institute of Pathology), Specialist in Medical Pharmacology (Food and Drug Administration), Specialist in Maternal and Child Health (United States Children's Bureau) and Health Director (various agencies). The salaries range from $7,102 to $9,975 a year. Written examination is not required. A preliminary review will be made of the training and experience of each applicant, and those who do not meet the requirements will be so notified. Final ratings for the positions at the appropriate salary grade will be made based on a scale of 100. Veteran preference based on honorable separation from the armed forces are given under certain conditions in competitive examination for original appointment. Five points are added to the earned rates of the applicant for his or her active service in the armed forces during any war. Ten points are added to the earned ratings of applicants who establish a claim to preference as: (a) a disabled veteran; (b) the wife of a disabled veteran who is disqualified for appointment because of his service connected disability, and (c) the unmarried widow of a deceased ex-service man who served in the armed forces on active duty during any war.

Applicants must be graduates of an approved medical school, but graduates of schools "unapproved" by the American Medical Association will be accepted provided they are qualified in all other respects and have supplemented their education with at least one year in the military service or the U. S. Public Health Service with unrestricted duties as commissioned medical officers, such duties including the treatment of patients. Applicants must also have had progressively responsible experience or education in a specialized medical field and for some positions must also be currently licensed to practice medicine and surgery. The maximum age limit, 62 years, will be waived for persons entitled to veteran preference.

Applicants must also be citizens of or owe allegiance to the United States, or must be citizens of the Republic of the Philippines. A physical examination will be made by a federal medical officer. Appointments will be made subject to investigation and will be probational unless otherwise limited. Probational appointments become permanent after a satisfactory probational period of one year.

Interested persons may secure application forms from post offices, from the United States Civil Service Commission in Washington, D. C., or from the Civil Service regional offices.

MARY E. SWITZER AWARDED CERTIFICATE OF MERIT

The President recently awarded the Certificate of Merit to Miss Mary Elizabeth Switzer of Washington, D. C. The citation read as follows: "While serving in her regular capacity as Assistant to the Administrator, Federal Security Agency, she was Assistant to the Chairman, Procurement and Assignment Service for Physicians, Dentists, Veterinarians, Sanitary Engineers and Nurses, War Manpower Commission, and to the Director, War Research Service, Federal Security Agency. As special adviser and counselor to each during a period when the successful prosecution of the war required unusual intelligence, foresight and integrity in certain medical and scientific enterprises, Mary E. Switzer rendered invaluable aid in the organization and coordination of these activities throughout the United States which was far beyond what would be required and expected. In this work much of which was of the highest secret classification, her exceptional knowledge of government administration and of leaders in administrative positions and in medicine and science, both within and without the government service, combined with her high intelligence, indefatigable effort, and the confidence and trust which she inspired on the part of all concerned, contributed in large measure to the success of two war projects of indispensable value to the country in the prosecution of the war."

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH)

ALABAMA

Changes in Health Officers.—Dr Daniel G Gill, Montgomery, has been appointed health officer of Montgomery County to succeed Dr James L Bowman, resigned——Dr A M Shelamer is county health officer of Madison County, instead of Dr J L Carpenter as was reported in THE JOURNAL last November 2 Dr Carpenter has been appointed a county commissioner of Madison County

Postgraduate Seminar—The Medical College of Alabama, Birmingham, conducted a postgraduate seminar December 2 to 5 Among the speakers were Dr A Ashley Weech, professor of pediatrics, University of Cincinnati, 'Emotional Needs of the Child in the Development of Behavior", Dr Edgar Jones, Vanderbilt University Nashville, Tenn "Nutritional Factors in Anemia", Dr Waltman Walters, Mayo Clinic, Rochester, Minn, "Surgical Treatment of Peptic Ulcer—Special Reference to Vagotomy," and Dr Rudolph A Bartholomew professor of clinical obstetrics, Emory University, Atlanta, Conservative Versus Radical Treatment of Premature Separation of the Placenta'

CALIFORNIA

Refresher Courses on Cancer—The first of a series of refresher courses on cancer for general practitioners in California will be given at Los Angeles County General Hospital January 6 8 They are being offered by the California Cancer Commission and the California Division of the American Cancer Society and will be under the supervision of the Tumor Board of the Los Angeles County General Hospital The course will include both day and evening clinics Applications should be sent to Dr E M Butt, 1200 North State Street, Los Angeles 33

Howard West Takes New Position—Dr Howard F West, Los Angeles, was appointed to the newly created position of medical director of the Los Angeles County Department of Charities, effective Nov. 1, 1946 Newspapers report that Dr West will serve as medical adviser to County Superintendent of Charities Arthur J Will and the medical directors of the various hospitals and will 'carry on scientific and professional activities relating to medical policies, problems and programs of the county" Dr West is president of the American Heart Association and clinical professor of medicine at the University of Southern California

Annual Clinical Assembly in Obstetrics and Gynecology.—The second Annual Mid-Winter Clinical Assembly in Obstetrics and Gynecology will be held in Los Angeles February 10 to 15 The faculty will include Dr Albert H Aldridge, chief surgeon, Woman s Hospital, New York, Dr Joseph L Baer of the University of Illinois College of Medicine, Chicago, Dr Frieda Fromm-Reichmann of Chestnut Lodge Sanitarium, Rockville, Md , Dr George Van S Smith of Harvard Medical School, Olive Watkins Smith, Ph D , of the Fearing Research Laboratory in Massachusetts and William F Windle, Ph D , of the recently established University of Washington School of Medicine in Seattle Obstetricians and gynecologists from all the Western states are invited to attend Dr Roy Fallas, Los Angeles 5 is the secretary treasurer

ILLINOIS

Personal—Dr Dan Morse Columbus Ohio, has been appointed medical director and superintendent of the Peoria Municipal Tuberculosis Sanitarium succeeding Dr Maxim Pollak, recently resigned

Basic Science Course—Registration for the second nine month basic science course in the University of Illinois College of Medicine opened January 1 This is another in a series of professional postgraduate courses designed primarily to meet the needs of medical officers returned from service in the armed forces

Chicago

Meeting of Internists—The Chicago Society of Internal Medicine will meet January 27 at the Drake Hotel. The program is as follows: Drs. Ralph E Dolkart and Robert N Hedges, "Present Incidence of Amebic Dysentery in the Chicago Area', Drs S Ernest G McEwen and Richard H Young, Evanston, "Bacillary Dysentery as the Etiology of Reiter's Syndrome', Drs Howard W Crail, Howard L Alt Evanston and Walter H Nadler, "Myelofibrosis Associated with Tuberculosis"

Cook County Health Survey—A Chicago-Cook County health survey, conducted recently by the U S Public Health Service, made four recommendations to the city and county in their battle against venereal disease (1) that routine blood examinations for syphilis be instituted in all tax-supported hospitals and clinics and encouraged in voluntary hospitals and clinics, (2) that a large venereal disease clinic be organized in Cook County Hospital and the county health department be provided with a full time venereal disease officer, (3) that the intensive treatment center, 2449 Dearborn Street, be moved to the new west side medical center and that clinics be located in association with general health clinics or hospitals and (4) that the public health service be released immediately from administering the city program and that a city health department employee be named director

MASSACHUSETTS

License Restored.—The Board of Registration of Medicine on November 22 voted to restore the certificate of registration of Dr Theodore Rosen, formerly of Boston

Rehabilitation Program—Dr Augustus Thorndike, Associate in Surgery, Harvard Medical School, and recently head of the rehabilitation division in the Surgeon General's Office, U S Army, addressed the New England Society of Physical Medicine in Boston, Dec 18, 1946 on The Army Patient Rehabilitation Program of World War II ' Dr Thorndike also showed a motion picture of the rehabilitation program produced recently in Hollywood under the direction of the Army

MINNESOTA

Swedish Radiologist Addresses County Society—Dr Nils Westermark Swedish radiologist, was the speaker at the Hennepin County Medical Society, Minneapolis December 9 on the subject "Bronchogenic Carcinoma ' Dr. Westermark is a Docent in radiology at the Caroline Institute, University of Stockholm and radiologist at St Goran s Hospital

NEW JERSEY

Society of Surgeons of New Jersey—An entire day was given over to the Annual Meeting of the Society of Surgeons of New Jersey, Nov 20, 1946 in Newark, the morning being devoted to operations at the City Hospital and the afternoon to the presentation of papers, a motion picture on reconstructive surgery of the lower extremity, and a tour of the Pathological Laboratory and Museum Dr Herbert W Nafey, New Brunswick, was elected president for the ensuing year Twenty-three new active members were elected at this meeting

NEW YORK

Lecture on Function of Adrenal Cortex—Dr Cyril N H Long, Sterling professor of Physiological Chemistry at Yale University, will speak at the New York Diabetes Association at an open meeting, January 11, 8 30 p m , at Blumenthal Auditorium Mount Sinai Hospital, New York His subject will be "Recent Studies on the Function of the Adrenal Cortex

Fellowship in Rheumatic Disorders—Dr Norman Spitzer, Yonkers, was appointed Robert Trubek fellow in rheumatic disorders for 1946 1947 according to Dr Currier McEwen, dean, New York University College of Medicine The fellowship open to physicians with at least two years of previous training in internal medicine carries a stipend of $2 500 and provides a year of research and special clinical training at the University and Bellevue Hospital

Clinic Day at Niagara Falls—The Academy of Medicine, Niagara Falls has arranged a special program of guest speakers for clinic day which will be held at Niagara Hotel on March 8 Dr Walter F Kvale, Mayo Clinic, Rochester, Minn , will speak on Prevention of Venous Thrombosis and Pulmonary Embolism' Dr John Romano, professor of psychiatry, University of Rochester School of Medicine, on "The Diagnosis of Neurosis , Dr Gabriel Tucker, Graduate Medical School of the University of Pennsylvania, on 'Obstructive Dyspnea," and Dr Newlin F Paxson professor of clinical obstetrics, Hahnemann Medical College, Philadelphia, on "Extraperitoneal Cesarean Section At the dinner meeting Dr Morris Fishbein, Chicago, Editor of THE JOURNAL, will speak on 'The Rise and Fall of Charlatanism' The chairman of the program committee is Dr Vincent D Leone, and the president of the academy is Dr Joseph V Farugia

Richmond County Postgraduate Lectures—Postgraduate lectures for the Richmond County Medical Society have been arranged by a committee on public health and education of the Medical Society of the State of New York Lectures will be given Thursday afternoons at 3 30 in the auditorium of the U S Marine Hospital, Stapleton Staten Island On January 2 Dr Homer F Swift, Hospital of the Rockefeller Institute for Medical Research, spoke on "Rheumatic Fever—Rheumatic Heart Disease", January 9 Dr Hugh Chaplin, clinical professor of pediatrics, New York University College of Medicine, will speak on "Care and Feeding of Prematures", January 16 Dr Nathan Sobel, assistant clinical professor of dermatology and syphilology, New York Post-Graduate Medical School, Columbia University 'Diagnosis and Treatment of Common Skin Diseases , January 23 Dr Lloyd F Craver, assistant professor of clinical medicine, Cornell University Medical College, 'Treatment of Lymphomatous Diseases,' and January 30 Dr Herman O Mosenthal, professor of clinical medicine, New York Post Graduate Medical School, Columbia University, 'Insulin in the Treatment of Diabetes"

New York City

Cooperative Investigation of Food Poisoning—In an effort to discover the cause of a recent outbreak of 20 cases of mild food poisoning among New Yorkers who ate Norwegian sardines packed in aluminum cans the New York State Health Department and the Norwegian government are conducting a cooperative investigation Jerome Trichter, director and Edwin W C Ludewig assistant director of the health department's bureau of food and drugs have sailed for Norway Two Norwegian scientists have arrived to study the situation here The city health department immediately placed an embargo on all Norwegian sardines packed in aluminum cans and the Norwegian government has held up the export of this product

Award Scholarships for Study of Eye Diseases—The recipients of four scholarships for advanced study of eye diseases at New York University College of Medicine were announced November 27 The physicians selected by the University's department of ophthalmology for the $500 awards are Dr Edward Danforth, Bainbridge, N Y, Dr Charles P Goldsmith, Catasauqua Pa Dr Jonathan L Harris, Elberon N J, and Dr Hugh E McGhee Jeffersonville N Y All are postgraduate students at the College of Medicine, and are specializing in ophthalmology The Eye Conservation Fund, Inc, of the New York Lions Club initiated the scholarship plan last spring with a gift of $2 000 to the college Mr Ernest R Fryxell, chairman of the Eye Conservation Fund, stated that the Lions Club will provide four scholarships annually for advanced study of eye diseases at New York University

Campaign to Raise $2,000,000 for Institute of Rehabilitation—The committee for the Institute of Rehabilitation of the New York University-Bellevue Medical Center is conducting a campaign to raise $2,000,000 for the new Institute of Rehabilitation Cochairmen of the committee are Major Gen William J Donovan, former director of the Office of Strategic Services, and Mrs Bernard F Gimbel, a former member of the Board of Directors of the Beth Israel Hospital The institute will teach and train, in the broad field of rehabilitation physicians medical students, physical therapists, occupational therapists, physical rehabilitation specialists, social workers, administrators and teachers, and will also provide for the actual care of patients as well as for research in this field It is proposed that the institute provide care for 300 patients, about 100 in dormitory facilities and 100 in the outpatient department, including physical rehabilitation, educational and vocational guidance and psychosocial adjustments for persons with all types of handicaps These plans, however, will not duplicate the programs of existing agencies in this field The executive vice chairman of the committee and chairman of the new department of rehabilitation and physical medicine of the New York University College of Medicine is Dr Howard A Rusk

NORTH CAROLINA

Annual Symposium at Durham—A medical and surgical symposium sponsored by the Watts Hospital staff will be held February 12 and 13 at Durham Meetings begin at 11 a m The program is as follows

Dr Sidney Farber and Dr Charles D May of Boston, Clinicopathologic Conference
Dr Leland S McKittrick, Boston "Surgical Aspects of Diabetes"
Dr Howard F Root, Boston "Recent Advances in the Study and Treatment of Diabetes '
Dr Joseph Stokes Jr Philadelphia "Viral Hepatitis"
Dr Francis C Wood, Philadelphia, "Pericardial Scars '
Col J E Ash and Dr Wallace M Yater of the District of Columbia Clinicopathologic Conference
Dr Albert M Snell Rochester, Minn, 'Clinical and Physiologic Aspects of Portal Cirrhosis
Dr Monroe J Romansky, District of Columbia, 'The Current Status of Calcium Penicillin in Beeswax and Peanut Oil
Dr Charles A Doan, Columbus, Ohio 'Present Status of Effective Specific Therapy Based on Exact Hematologic Diagnosis'

OHIO

Program of Cincinnati Academy.—The scientific program for the entire year of the Academy of Medicine of Cincinnati has already been prepared At the January 21 meeting Dr Edgar Allen, associate professor of medicine, Rochester, Minn will discuss "The Present Status of Anticoagulant Therapy," and on February 4 Dr Herbert F Traut, professor of obstetrics and gynecology, University of California Medical School, San Francisco, "The Present Status of Hormone Therapy in Gynecology" The Rachford lectures will be delivered February 18 and 19 by Dr Alfred Blalock, professor of surgery, and Dr Helen B Taussig, associate professor of pediatrics, Johns Hopkins University School of Medicine, Baltimore for "Diagnosis, Surgical Treatment and Results in Congenital Heart Disease '

PENNSYLVANIA

Annual Meeting of Psychiatrists—At the eighth annual dinner meeting of the Pennsylvania Psychiatric Society in Philadelphia recently former U S Supreme Court Justice Owen J Roberts spoke on 'What the Layman Can Do About Mental Illness' Dr Charles H Henninger, Pittsburgh was elected president of the society, Dr LeRoy M A Maeder of Philadelphia, president-elect and Dr Philip Q Roche, Philadelphia secretary-treasurer

Fellowship in Diabetic Research Established—A new fellowship in clinical diabetic research has been established at the hospital of the University of Pennsylvania, it was announced today by Dr George W McClelland president of the University The fellowship was made possible through the generosity of Philadelphia and Wilmington friends of the university In its first year the fellowship will be concerned chiefly with the development of new technics to improve the care of the diabetic patient and new methods of controlling the disease Although the fellowship will represent a separate research activity, it will work in cooperation with the George S Cox Medical Research Institute

Philadelphia

Postgraduate Seminar in Radiology—The second annual Philadelphia postgraduate seminar in radiology will be held March 30 to April 4 as announced by Dr Burton R Young, chairman of the special committee of the Philadelphia Roentgen Ray Society Dr Paul C Swenson has been appointed director of lecture sessions Dr Calvin L Stewart is secretary The course will be limited to one hundred radiologists The tuition fee will be $50

Personal—Dr Clarence N Smith, an officer of the regular Navy since 1918, has been appointed industrial medical consultant for the eastern area of Pennsylvania for the bureau of industrial hygiene, Pennsylvania Department of Health——Dr B S Oppenheimer, professor of clinical medicine, Columbia University College of Physicians and Surgeons and chief of medicine, Mount Sinai Hospital, New York, gave an address on neurocirculatory asthenia at a meeting December 12 at the Wolffe Clinic, Philadelphia

TENNESSEE

Physician Honored.—A public celebration was held in Calhoun in honor of Dr Henry F Taylor on his sixty-sixth birthday Dr Taylor has practiced in the town for forty years

Ernest Goodpasture Wins Award—Dr Ernest W Goodpasture, professor of pathology and dean of the Vanderbilt University School of Medicine, Nashville, was presented with the tenth annual Kappa Sigma Fraternity "Man of the Year" cup on December 7 Dr Goodpasture was a Kappa Sigma at Vanderbilt University, where he received his B. A. degree in 1907. Earlier this year he received the $5,000 Passano Foundation award for his work in medical research (The Journal, April 27, 1946, page 1256).

VIRGINIA

Advisory Board on Mental Hygiene.—Four appointments were recently announced to the governor's advisory board on mental hygiene. The recipients are Dr. Patrick H. Drewry Jr., Medical College of Virginia, and Drs. Claude L. Neale, George S. Fultz Jr. and Harry Brick, all of Richmond.

Seaboard Medical Society.—Dr. Oscar R. Yates, Suffolk, was elected president of the Seaboard Medical Society December 5 at a three day meeting of physicians from Virginia and North Carolina. Other officers elected are Dr. Dewey H. Bridger, Bladenboro, first vice president; Dr. Walter P. Adams, Norfolk, second vice president; Dr. Charles H. Lupton, Norfolk, third vice president, and Dr. Clarence Porter Jones Sr., Newport News, secretary-treasurer.

Personal.—Dr. Granville L. Jones, Marlboro, N. J., has been appointed superintendent of the Eastern State Hospital, Williamsburg, succeeding Dr. Joseph E. Barrett, Marian, who is now state commissioner of mental hygiene and hospitals.——Dr. David L. Harrell Jr. has been appointed in charge of the Lynchburg state colony, Richmond. His position as superintendent of the Western State Hospital, Staunton, has been filled by Dr. James B. Pettis, Norfolk.——Dr. Marion S. Fitchett, Norfolk, has been appointed a member of the Virginia state board of medical examiners to succeed Dr. Philip St. L. Moncure, Norfolk.

WEST VIRGINIA

Mental Hygiene Clinic.—The first mental hygiene clinic of its kind ever established in West Virginia has been opened by the Veterans Administration at its regional office in Huntington. Dr. Edward F. Reaser, former assistant superintendent of the Huntington State Hospital, has been named supervisor and chief psychiatrist at the clinic. He resigned as assistant at the Huntington State Hospital effective November 15. Service connected nervous disorders will be treated at the clinic through a process of study and reeducation. Members of the staff will be graduate physicians in this specialized branch of medicine, psychologists and social service workers.

Central Society Meeting.—Dr. J. N. Reever of Charleston was the guest speaker at the quarterly meeting of the Central West Virginia Medical Society held at Gassaway December 5. He gave an illustrative talk on the "Surgical Treatment of Tuberculosis." A round table discussion followed. The following physicians were elected honorary lifetime members of the society: Drs. O. O. Eakle and H. S. Brown, Sutton; Dr. L. W. Deeds, Buckhannon; Drs. G. M. Burton and S. H. Burton, Weston; Dr. J. B. Dodrill, Webster Springs; Dr. H. O. Van Tromp, French Creek, and Dr. Charles B. Rohr, Alum Bridge. Dr. Ralph M. Fisher of Weston and Dr. B. L. Page of Buckhannon were elected members of a committee to arrange for the organization of an auxiliary to the Central Vest Virginia Medical Society.

WISCONSIN

Inaugurate Surgical Society.—The inaugural meeting of the Wisconsin Surgical Society was held in Milwaukee November 15. Dr. F. Gregory Connell, Oshkosh, gave the "President's Address." Dr. Frederick A. Coller, professor of surgery, University of Michigan Medical School, spoke on "Abdominal Incisions and Early Ambulation." There were operative clinics at the Milwaukee, Columbia, Veterans Administration and Milwaukee County Hospitals, and dry clinics in the amphitheater at the Milwaukee Children's Hospital. This new group was organized September 14 at a meeting in Milwaukee with fifty founder members (The Journal, Oct 11, 1946, page 401).

Brief Course in Cardiology.—A series of five day intensive courses for Wisconsin physicians are to be given at the medical school and Wisconsin General Hospital in Madison. The first course will be Jan. 13 to 17, 1947, on cardiology. The work will be of a practical nature intended to present to general practitioners the current diagnostic and therapeutic measures available. It will be under the supervision of Drs. C. M. Kurtz and H. H. Shapiro. The fee will be $25 for the five day course. Further information can be had from Dr. Llewellyn R. Cole, coordinator of graduate medical education, Wisconsin University Medical School.

PUERTO RICO

Organize Women's Medical Chapter.—Thirty-one women members of the Medical Association of Puerto Rico have organized the Women's Chapter of the Puerto Rico Medical Association under the chairmanship of Dr. Dolores M. Pinero, an official of the Insular Department of Health.

New Health Commissioner.—The governor has designated Dr. Juan A. Pons, San Juan, as head of the Department of Health of Puerto Rico to succeed Dr. Antonio Fernos Isern, who was recently named resident commissioner of Puerto Rico in the United States. Dr. Pons, who was educated in American universities, was until recently director of municipal hospitals for the city of San Juan.

Large Increase in Premedical Students.—An increase of 179.2 per cent in the registration of premedical students alone over that of 1945 at the University of Puerto Rico, an increase of 69.3 per cent in pharmacy students and of 46.8 per cent in liberal arts students, due in part to the large number of veterans who have returned to the island, caused the Puerto Rico Pnanning Board to submit a six year expansion program involving an expenditure of nearly $15,500,000. Large numbers of premedical students are going to Mexico, Cuba and other Latin American countries because of the overcrowded situation in their own country and in the United States.

GENERAL

Fellowship Open to Women Physicians.—The Women's Medical Association is offering a Mary Putman Jacobi Fellowship for medical research. This fellowship of $1,000 will be available in October and is open to every woman physician, either American or foreign, who is a graduate of a reputable medical school. Application blanks may be obtained from the secretary of the committee, Dr. Phebe L. DuBois, 150 East Seventy-Third Street, New York 21.

Hospital Association Midyear Conference.—The midyear conference of presidents and secretaries of the American Hospital Association will be held February 7 and 8 at the Drake Hotel, Chicago. Its purpose is to assist the officers of state hospital associations in coordinating and developing their programs to improve and raise standards of hospital care. Dr. Vane M. Hoge, Washington, D. C., will discuss the administration of the hospital service and construction act.

Recommends Counter Antivivisection Legislation.—Dr. A. J. Carlson, Chicago, president of the National Society of Medical Research, advocates that medical scientists take the initiative on counter antivivisection bills with legislation of their own to guide the legislatures in their consideration of animal experimentation. It is expected from current newspaper reports that antivivisection legislation will be introduced in forthcoming state legislature sessions. The National Society of Medical Research, which was organized early this year under sponsorship of the Association of American Medical Colleges, is taking the lead in counter antivivisection legislation programs. Members and endorsers of the society include the Chamber of Commerce of the United States, the American National Red Cross and many scientific groups. Officers of the society are at 25 East Washington Street, Chicago.

New Public Health Association Officers.—At the annual meeting of the American Public Health Association in Cleveland, November 12 to 14, the following officers were elected: Harry S. Mustard, dean of the School of Public Health, Columbia University, president; Martha M. Eliot, associate chief, Children's Bureau, U. S. Federal Security Agency, president-elect; Gregoire F. Amyot, provincial health officer, Provincial Board of Health, Victoria, British Columbia, Canada, vice president; A. Fernos Isern, recently commissioner of health, Puerto Rico, vice president; H. A. Whittaker, director, Division of Sanitary Engineering, Minnesota School of Public Health, vice president, and Louis I. Dublin, vice president and statistician, Metropolitan Life Insurance Company, treasurer.

Award for Research in Nutrition.—The American Institute of Nutrition will present an award at its annual meeting in Chicago, May 18 to 22, in recognition of research which has emphasized the significance of the components of milk or dairy products. As this is the Borden award, employees of the Borden Company are not eligible for this honor. While the award will be made primarily for the publication of specific papers, the judges may recommend that it be given for important contributions over an extended period of time. Nominations must be in the hands of the chairman of the Nominating Committee, Genevieve Stearns, State University of Iowa College of Medicine, Iowa City, by January 15 and should be accompanied by data relative to the nominee and his research.

Atomic Energy Medical Forum.—At a meeting of the American Pharmaceutical Manufacturers' Association at the Waldorf Astoria, New York, Dec. 10, 1946, Dr. Shields Warren, assistant professor of pathology at Harvard Medical School, Boston, read a paper on "Physiological Reactions to Radioactive Isotopes"; Dr. Frank H. Krusen, Mayo Clinic, Rochester, Minn., "General Medical Aspects of Atomic Energy"; Samuel K. Allison, Ph.D., director of the Institute of Nuclear Studies, University of Chicago, "Atomic Energy in the Physical Sciences"; Paul C. Aebersold, Ph.D., Research Division, Manhattan District, Oak Ridge, Tenn.; "Use of Radioactive Isotopes by the Pharmaceutical Profession," and Dr. G. Failla, Columbia University College of Physicians and Surgeons, "Nuclear Physics and Medical Research."

New National Formulary Published.—The Council of the American Pharmaceutical Association has completely revised and enlarged the National Formulary, which was to be available in December 1946. The publication provides official specifications for many widely used drugs not previously included in either the U. S. Pharmacopeia or the National Formulary. The eighth edition represents the culmination of four years of planning and work by members of the committee on the National Formulary, the staff of the American Pharmaceutical Association laboratory and hundreds of collaborators connected with collegiate, institutional, governmental and industrial laboratories. Dr. Justin L. Powers is chairman of the committee of revision. It will be necessary for practicing pharmacists and others to have the book on hand prior to April 1, 1947 to meet the various state pharmacy and food and drug acts. Copies may be secured from the Mack Publishing Company, Twentieth and Northampton streets, Easton, Pa.

Association of Electroencephalographers.—The fifth meeting of the Eastern Association of Electroencephalographers was held at the Massachusetts General Hospital, Boston, December 4 and 5. The program included the following speakers:

W. Grey Walter, M.A., Burden Neurological Institute, England, Status of Electroencephalography in Europe and Remarks on International Meetings and Electroencephalographic Societies.

Dr. Frederick A. Gibbs, Chicago, The Problem of Frequency Analysis of the Electroencephalogram.

Dr. George Engel, Rochester, N. Y., Experiences with Manual Analysis of the Electroencephalogram.

Dr. Robert Cohn, Washington, D. C., Experiences with Automatic Phase Analysis.

At a joint meeting of the association with the Boston Society of Neurology and Psychiatry the speakers were Robert S. Schwab, "Application and Limitations of Electroencephalography in a General Hospital"; Hudson Hoagland, Sc.D., "Brain Wave Frequencies and Brain Chemistry," and W. Grey Walter, "Clinical Application of Automatic Analysis of the Electroencephalogram and Demonstration."

Prizes for Scientific Studies of Sugar.—Dr. Harlow Shapley, chairman, National Science Fund, National Academy of Sciences, Washington, D. C., announces that scientists of all countries have been invited to compete for prizes totaling $40,000 posted by the Sugar Research Foundation in order to stimulate scientific studies of sugar as a food and an industrial raw material. Members of the advisory committee in charge of recommendations for the awards are William C. Stadie, professor of research medicine, University of Pennsylvania; A. Baird Hastings, professor of biochemistry, Harvard University; Charles F. Kettering, General Motors Corporation; Carl S. Marvel, professor of organic chemistry, University of Illinois; Edmund W. Sinott, professor of botany, Yale University, and Vincent Du Vigneaud, professor of biochemistry, Cornell University Medical College. Awards of $5,000 will be given in 1947, 1948 and 1949 with a grand prize of $25,000 in 1950 for the most significant discovery of the preceding five years. Winners of the preliminary awards are also eligible for the grand prize. Entries for the award, which will be given on or about March 15, should be in the hands of the executive secretary, National Science Fund, National Academy of Sciences, Washington, D. C., not later than February 1.

Indictment Charging Restraint of Trade in Surgical Dressings.—Attorney General Tom Clark announced that a federal grand jury at Boston November 21 returned an indictment charging four corporations and five individuals with conspiracy to restrain domestic and foreign trade and commerce in the manufacture, sale and distribution of surgical dressings in violation of the Sherman Antitrust Act. The defendant corporations are Johnson & Johnson, New Brunswick, N. J.; Johnson & Johnson International, New Brunswick, N. J.; Parke, Davis & Co., Detroit, and Kendall Company, Boston. The individuals indicted are E. Briar, Detroit, Parke, Davis & Co. secretary and foreign sales manager; Arthur Clapham, New Brunswick, N. J., Johnson & Johnson director of overseas operations and president of Johnson & Johnson International; Earl E. Dickson, New Brunswick, N. J., Johnson & Johnson vice president in charge of hospital division; L. H. Nichols, Chicago, Kendall Company manager of hospital dressings, and Charles K. Perkins, Chicago, Kendall Company general sales manager. Attorney General Clark said that the indictment charges that the defendant corporations together produce and sell about 75 per cent of the total annual production of surgical dressings in the United States and that they agreed on the prices and terms for the sale of surgical dressings throughout the United States and in foreign commerce. Wendell Berge, Assistant Attorney General in charge of the Antitrust Division, stated: "Municipalities and the federal government are among the largest purchasers of surgical dressings. This case is part of the program of the Antitrust Division to eliminate the price fixing and to break up monopolies in the sale of those items purchased in large quantities by the federal, state and local governments. This case was instituted as a result of complaints made to the Department of Justice by municipalities."

FOREIGN

Anniversary of Rheumatic Council.—The Empire Rheumatism Council celebrated its tenth anniversary in London, October 26 to 29. Mr. Bevan, the Minister of Health, received the delegates. Among those in attendance were Lord Horder, the Minister of Agriculture, and the presidents of the colleges of physicians and surgeons. Dr. Loring Swain of Boston presented the greetings of the Pan American Rheumatism League. Professor J. Axel Höjer, chief medical officer of Sweden, lectured on the organization of research and treatment of rheumatism in that country. A symposium was opened on the application of virus work to polyarthritis in men and animals by Dr. G. M. Dindlay and Prof. C. H. Andrewes. The Heberden Society gave a dinner, and the British Council, a reception to some 200 guests who were welcomed by Sir Edward Mellanby, director of the Medical Research Council.

Trudeau Festival in Japan.—The "Recuperation Festival" known as the "Trudeau Festival," in honor of Edward Livingston Trudeau, was revived and observed throughout Japan, according to the Nippon *Times*, October 5. Celebrations were held at the 149 tuberculosis sanatoriums which are under the supervision of the Nippon Medical Corps. During the festival these sanatoriums were open to the public, and medical treatment was freely dispensed there. The program permits during the three day festival home tuberculous patients to enter sanatoriums under the supervision of the medical corps and stay there for six days free of charge, receiving instructions in their recuperation. The first day is called "Hospital Treatment Day," the second "Recuperation Day" and the third day is devoted to talks, entertainment and hunting treasures. The Nippon *Times* says that the state tuberculosis sanatoriums have about 25,000 beds and the 10,000 private sanatoriums more than 60,000 beds.

Congress of School and University Hygiene.—The Society of Medical Inspectors of the schools in the district of Seine and the French Society of School Hygiene are organizing a Congress of School and University Hygiene to be held in Paris, June 25-29, under the auspices of the ministers of national education and of public health. The organizers of the congress hope that doctors interested in school hygiene in various countries will participate in the congress either as discussers or as reporters. Participation and registration in the congress are free. Collected reports, which will be published a month after the congress, may be subscribed for, the price to be fixed at a later date. Members who desire to receive a copy of a report or who wish to make a communication are asked to apply to the general secretary. On the occasion of this congress the French Society for School Hygiene will propose the creation of an international association to be charged with the organization of periodic congresses and establishment of relations between doctors in different countries who are interested in the problems of school hygiene. Correspondence concerning the congress should be addressed to Dr. Pierre Delthil, Secretary General, 46, Rue de Naples, Paris.

Deaths in Other Countries

Dr. Adolf Liechti, professor of radiology, University of Berne, Switzerland, died August 26, aged 48.——**Vladimir V. Lebedenko**, head of the neurosurgical clinic of the Moscow Medical Institute, Russia, died October 15.——**Lieut. Gen. Nikolai Nilovich Burdenko**, chief surgeon of Russia's armed forces and a deputy of the Supreme Soviet, aged 68.

Deaths

Frank Reid Mount ⊕ Portland, Ore.; born in Springfield, Ore., in 1888; Columbia University College of Physicians and Surgeons, New York, 1912; assistant clinical professor of medicine at the University of Oregon Medical School; member of the House of Delegates of the American Medical Association in 1945; member of the North Pacific Society of Internal Medicine; fellow of the American College of Physicians; served as president of the state board of health; specialist certified by the American Board of Internal Medicine; on the staffs of the Good Samaritan and Multnomah hospitals; served during World War I; began active duty as a lieutenant colonel in the medical corps, Army of the United States, in July 1942, and service terminated in December 1944; died October 11, aged 58, of cerebral embolism and coronary occlusion.

John Howell McLean ⊕ Fort Worth, Texas; born in Mount Pleasant, Texas, on June 11, 1877; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1899; Cornell University Medical College, New York, 1901; fellow of the American College of Surgeons; charter member and past president of the Tarrant County Medical Society; president of the old North Texas Medical Society; served as a member of the state board of medical examiners; formerly professor of gynecology at the Fort Worth School of Medicine; during World War II served on the board of appeals for Selective Service and received a medal for his work; died September 20, aged 69, of acute nephritis.

Matthew Cotton Darnell, Frankfort, Ky.; born in 1874; University of Louisville Medical Department, 1907; member of the American Medical Association; past president of the Franklin County Medical Society; city and county physician; formerly county health officer; served as school trustee and as secretary of the Woodford County Board of Education; recently received a "selective service medal" authorized by Congress for serving without compensation in examining selectees during the national emergency; on the staff of the King's Daughters' Hospital; died November 8, aged 72, of injuries received when he was struck by a truck.

Arthur Wight Benson ⊕ Troy, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1914; specialist certified by the American Board of Pediatrics; member of the American Academy of Pediatrics; served as president of the board of visitors and on the staff of the New York State Reconstruction Home in West Haverstraw, as consultant in pediatrics at the Mary McClellan Hospital in Cambridge and as pediatrician to the Leonard and Samaritan hospitals; died in the Presbyterian Hospital in New York, November 20, aged 59, of hypertension and lobar pneumonia.

William Thomas McConnell ⊕ Louisville, Ky.; University of Louisville Medical Department, 1918; associate clinical professor of obstetrics and gynecology at his alma mater; specialist certified by the American Board of Obstetrics and Gynecology; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons; formerly chairman of the obstetric section of the Southern Medical Association; on the staffs of the Norton Memorial Infirmary, Kentucky Baptist and Louisville City hospitals; at one time associate editor of the *Kentucky State Medical Journal;* died October 16, aged 61, of heart disease.

John William Pennington ⊕ Phoenix, Ariz.; born in Sigourney, Iowa, March 3, 1903; State University of Iowa College of Medicine, Iowa City, 1929; specialist certified by the American Board of Urology; member of the American Urological Association; past president of the Maricopa County Medical Society; in 1945 vice president of the Arizona State Medical Society; interned at the State University Hospital in Oklahoma City; served a residency at the Henry Ford Hospital in Detroit; on the staffs of St. Joseph's and Good Samaritan hospitals; died October 12, aged 43, of an accidental gunshot wound.

John Albert Wilkens ⊕ St. Marys, Mo.; St. Louis College of Physicians and Surgeons, 1902; St. Louis University School of Medicine, 1905; past president of Ste. Genevieve County Medical Society; registered druggist and president of St. Marys Drug Company; president of the board of education of St. Marys; served on the medical advisory board during World Wars I and II; past president of the Chamber of Commerce; at one time assistant in diseases of children at the National University of Arts and Sciences in St. Louis; died November 3, aged 72, of carcinoma.

Jeremiah Frank Armstrong, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1912; for many years school physician in the city health department; died November 2, aged 69, of shock and hemorrhage following gunshot wound received from an unknown person in an alleged holdup.

John M. Axelson ⊕ Chicago; Bennett Medical College, Chicago, 1900; Northwestern University Medical School, Chicago, 1904; served during World War I; on the staff of the West Suburban Hospital in Oak Park, Ill.; died in the Swedish Covenant Hospital November 11, aged 74, of cerebral hemorrhage.

James William Bailey ⊕ Kosciusko, Miss.; College of Physicians and Surgeons, Memphis, Tenn., 1911; county health officer; on the staff of the Montfort Jones Memorial Hospital in Kosciusko; died November 4, aged 75, of cerebral hemorrhage.

Blenn Rife Bales, Circleville, Ohio; Starling Medical College, Columbus, 1900; veteran of the Spanish-American War; for many years surgeon for the Norfolk and Western Railroad; died October 25, aged 70, of cerebral hemorrhage.

Edward A. Campbell, Carlisle, Ky.; Southwestern Homeopathic Medical College and Hospital, Louisville, 1897; member of the American Medical Association; died November 6, aged 72, of angina pectoris and cerebral hemorrhage.

Leander Marshall Crosby ⊕ Wakefield, Mass.; Dalhousie University Faculty of Medicine, Halifax, Nova Scotia, Canada, 1901; past president of the Middlesex East District Medical Society; died in New York October 24, aged 70, of heart disease.

Alonzo Gustin Dennett, Lowell, Mass.; Rush Medical College, Chicago, 1883; member of the American Medical Association; served on the staff of St. Joseph's Hospital; died October 11, aged 91, of arteriosclerosis.

Rudolph John Eischeid, Dubuque, Iowa; Chicago College of Medicine and Surgery, 1913; past president and secretary of the Allamakee County Medical Society; served for a time as president of the school board of New Albin; on the staffs of St. Joseph Mercy Hospital and the Finley Hospital; died October 25, aged 63, of cerebral hemorrhage.

Leslie Knapp Fenlon ⊕ Clinton, Iowa; State University of Iowa College of Medicine, Iowa City, 1919; also a graduate in pharmacy; for many years city health officer and medical examiner for the Northwestern Railroad; served as a member of the Student Army Training Corps in Iowa City during World War I; on the courtesy staff of St. Joseph Mercy Hospital and on the staff of the Jane Lamb Memorial Hospital; died October 28, aged 53, of coronary occlusion.

Lewis Frick ⊕ Athens, Wis.; College of Physicians and Surgeons of Chicago, 1897; died in St. Joseph's Hospital, Marshfield, Wis., October 31, aged 76, of partial intestinal obstruction and mediastinal tumor.

Harry Theodore Frost ⊕ Wadena, Minn.; Northwestern University Medical School, Chicago, 1920; on the staff of the Wesley Hospital; died October 22, aged 52, of coronary heart disease.

George Thomas Gale, Newport, Ohio; Jefferson Medical College of Philadelphia, 1874; served as vice president and director of the Pleasants County Bank in St. Marys, W. Va., and was formerly a member of the board of education; died October 9, aged 94, of chronic bronchitis.

William Hyman Goldstein ⊕ Kearny, N. J.; University and Bellevue Hospital Medical College, New York, 1917; fellow of the American College of Surgeons; served during World War I; on the staffs of the West Hudson Hospital in Kearny and the Beth Israel Hospital in Newark, where he died October 5, aged 52, of subarachnoid hemorrhage.

H. Herbert Hammond ⊕ Van Buren, Maine; Chattanooga (Tenn.) Medical College, 1900; served on the staffs of the Presque Island (Me.) General Hospital and the Hotel Dieu Hospital; died October 30, aged 75, of heart disease.

Samuel Clifford Henslee, Dillon, S. C.; Hospital College of Medicine, Louisville, Ky., 1898; died October 29, aged 76, of thrombosis.

Roger Wolcott Hubbard ⊕ Chicago; University of Illinois College of Medicine, Chicago, 1927; formerly secretary of the Irving Park Branch of the Chicago Medical Society; served on the staffs of the Ravenswood and Illinois Masonic hospitals; died in the Augustana Hospital October 14, aged 48, of cerebral thrombosis.

George Baigerie Jobson ⊕ Franklin, Pa.; Harvey Medical College, Chicago, 1900; specialist certified by the American Board of Ophthalmology, American Board of Otolaryngology and the American Board of Plastic Surgery; member of the American Academy of Ophthalmology and Oto-Laryngology; fellow of the American College of Surgeons; past president of the Venango County Medical Society; served as a member and president of the board of education; affiliated with Oil City Hospital; died October 21, aged 77, of myocarditis.

Helen Jeffery Kelly, Milwaukee; University of Minnesota Medical School, Minneapolis, 1939; interned at Swedish Hospital in Minneapolis; diplomate of the National Board of Medical Examiners; formerly connected with the Kentucky State Board of Health in Louisville; died October 29, aged 43, of accidental barbiturate poisoning.

Arthur Samuel Kitchen ⊕ Escanaba, Mich.; University of Toronto Faculty of Medicine, Toronto, Canada, 1899; fellow of the American College of Surgeons; past president of the Delta County Medical Society; served as a member of the city council; on the staff of St. Francis Hospital; died October 30, aged 71, of coronary occlusion.

Edward Newton Lillard, Madison, Va.; Medical College of Virginia, Richmond, 1901; member of the American Medical Association; died October 9, aged 74, of carcinoma of the throat.

Wilbur Wallace McCleary, Remer, Minn.; Chicago Medical College, 1889; died October 22, aged 79, of coronary occlusion.

Robert Sherwood McGeachy, New Bern, N. C.; Bellevue Hospital Medical College, New York, 1894; member of the American Medical Association; served during World War I; health officer of Craven County since 1939; formerly health officer of other counties; died in St. Luke's Hospital October 9, aged 74, of burns received when a gas water heater exploded in the basement of his home.

Ady Royal McKeown, Letts, Iowa; University of Colorado School of Medicine, Denver, 1911; served during World War I; died in the University Hospital, Iowa City, October 29, aged 63, of gunshot wounds.

Elsie Reed Mitchell, Berkeley, Calif.; Colorado School of Medicine, Boulder, 1897; served with the Red Cross in France during World War I and later served with the Near East Relief; died October 8, aged 74, of coronary thrombosis.

Henry Eugene Mitchell, Birmingham, Ala.; University of Tennessee Medical Department, Nashville, 1893; member of the American Medical Association; died in the Norwood Hospital October 11, aged 79, of bronchopneumonia and fractured right hip incurred in a fall.

Paul Morrison, St. Cloud, Fla.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1895; served during World War I; at one time affiliated with the U. S. Public Health Service Reserve and the Veterans Administration Facilities in Lakeland and Memphis, Tenn.; died October 27, aged 77, of hypertensive heart disease.

Nathan F. Mossell, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1882; past president of the National Medical Association; founder of the Philadelphia branch of the National Association for the Advancement of Colored People and co-founder of the Philadelphia Academy of Medicine and Allied Sciences; founder and for many years medical director of the Frederick Douglass Memorial Hospital; died October 27, aged 90.

Andrew Jackson Nellans, Bond Hill, Ohio; Bennett Medical College, Chicago, 1896; died October 12, aged 78.

Herman Frederick Ohswaldt, Oconto Falls, Wis.; Bellevue Hospital Medical College, New York, 1879; died October 22, aged 89, of chronic myocarditis.

John M. Patterson, Winterhaven, Fla.; Medical College of Ohio, Cincinnati, 1902; for many years practiced in Lima, Ohio; died recently, aged 69.

George P. Paulman, Cumberland, Md.; Baltimore University School of Medicine, 1902; Baltimore Medical College, 1906; died October 13, aged 68.

William H. Perry, Louisville, Ky.; Illinois Medical College, Chicago, 1908; a member of the original board of directors of the Red Cross Hospital; died in Anchorage, October 13, aged 86, of chronic myocarditis.

John Dodge Peters, Great Barrington, Mass.; Columbia University College of Physicians and Surgeons, New York, 1904; served during World War I; died in the Fairview Hospital October 20, aged 67, of bronchopneumonia.

Pedro Platou, Brooklyn; Long Island College Hospital, Brooklyn, 1920; fellow of the American College of Surgeons; member of the American Medical Association; began active duty as major in the medical corps, Army of the United States, in July 1942; chief surgeon of the 231st Station Hospital in England; promoted to lieutenant colonel and at the time of release from active duty in May 1946 held the rank of colonel; on the staff of the Norwegian Lutheran Deaconesses Hospital, where he died October 19, aged 54, of coronary heart disease.

[illegible] ard, Philadelphia; Jefferson Medical [illegible] 1883; died in October, aged 93.

Earl Van Reed ⊕ La Fayette, Ind.; Medical College of Indiana, Indianapolis, 1905; twice served as county coroner; formerly secretary of the board of health of La Fayette; served during World War I; on the staffs of La Fayette Home and St. Elizabeth hospitals; died October 10, aged 67, of right pulmonary embolus.

Walter A. Rivers, Glenwood, Ga.; Atlanta Medical College, 1894; served as a member of the state board of health; died in a hospital at Dublin September 28, aged 79, of cirrhosis of the liver.

Cunera R. Scheffer, Brookline, Mass.; Northwestern University Woman's Medical School, Chicago, 1894; died recently, aged 78, of bronchopneumonia.

Lewis Shirar, Flora, Ind.; Eclectic Medical Institute, Cincinnati, 1901; died October 7, aged 86, of bronchopneumonia.

Frederick Grant Sigman ⊕ Salisbury, N. C.; University College of Medicine, Richmond, 1909; specialist certified by the American Board of Radiology, member of the Radiological Society of North America, Inc., and the American College of Radiology; honorary member of the Medical Society of the State of North Carolina; on the staff of the Rowan Memorial Hospital; died in the University Hospital, Baltimore, October 21, aged 67.

Milton Hamilton Smith, Trumansburg, N. Y.; United States Medical College, New York, 1881; died September 29, aged 90.

Allen Horatio Thatcher, Chicago; Bennett Medical College, Chicago, 1896; died October 20, aged 79, of coronary thrombosis.

Thomas Gordon Tibby, Oakdale, Ill.; Rush Medical College, Chicago, 1894; cashier of the state bank; died in the Sutherland Hospital, Sparta, October 16, aged 75, of shock and brain concussion received when he fell down the basement steps.

George Thomas Twyman ⊕ Independence, Mo.; Rush Medical College, Chicago, 1915; fellow of the American College of Physicians; served on the Mexican border and in France during World War I; on the staff of the Independence Sanitarium and Hospital where he died October 4, aged 58, of diabetes mellitus and cardiac failure.

Hasseltine Stephens Walker, Brandon, Vt.; Northwestern University Woman's Medical School, Chicago, 1893; died October 23, aged 76.

John William Warner ⊕ Washington, D. C.; University and Bellevue Hospital Medical College, New York, 1909; fellow of the American College of Surgeons and the New York Academy of Medicine; served in France during World War I; formerly on the staff of the Roosevelt Hospital in New York, Doctors, Emergency and Georgetown hospitals; died October 29, aged 63.

Josef Werner, Boston; Julius-Maximilians Universitat Medizinische Fakultat, Würzburg, Bavaria, Germany, 1884; died recently of arteriosclerotic heart disease.

Richard E. Wilkinson, McKenney, Va.; Medical College of Virginia, Richmond, 1897; served on the staffs of the Petersburg (Va.) Hospital and the Stuart Circle Hospital, Richmond, where he died September 29, aged 80, of prostatitis and intestinal ulcer.

Charles B. Williams ⊕ Mineral Wells, Texas; University of Texas School of Medicine, Galveston, 1899; specialist certified by the American Board of Otolaryngology; fellow of the American College of Surgeons; past president of the Palo Pinto-Parker Counties Medical Society; at one time councilor of the Thirteenth District of the State Medical Association of Texas; president of the Texas Ophthalmological and Otolaryngological Society; on the staff of the Nazareth Hospital; died September 4, aged 72, of cerebral hemorrhage.

Charles Osborne Wright, Luverne, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1890; member of the American Medical Association; died in October, aged 82.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Dec. 7, 1946.

The Milk Conference

An important "Milk Conference" attended by scientists, doctors, producers, industrialists and consumers took place from Sept. 11 to 28, 1946, under the presidency of Professor Terroine. The minister for public health, the minister for food and representatives of the Academy of Medicine were present. Its aim was to establish an effective policy for milk. The milk production of 1,400 million liters in 1939 has fallen to 900 million in 1945. At the same time the birth rate has increased and is continuing to increase. There is also a lack of condensed milk; France needs 2,300,000 cases, and the French factories produce only 600,000 cases; moreover, the import of American condensed milk (360,000 cases yearly) has stopped. The French milk production is provided by small holdings; among 1,500,000 families of peasants, over 70 per cent have fewer than 4 to 5 cows, there is a lack of labor and also of food for cattle. This dispersion results in a poor quality of milk: of 420 million liters of raw milk sold, only 40,000 liters offer any hygienic guarantee. Among nurslings it results in 10 per cent of the deaths due to gastroenteritis. During the Nazi occupation the fat content of the milk diminished. The conference drew attention to the importance of skimmed milk for adults. The recent studies on the biology of cholin, by Prof. Jeanne Levy, director of the laboratory of the Academy of Medicine for the Control of Remedies and by Ernest Kahane, director of the laboratory of the National Center for Scientific Research, have shown, among other things, that cholin, a substance of first importance for alimentation, is not a constituent of the fat globules but of the plasma of milk. The conference also dealt with the addition of antiseptic chemicals to milk and to its byproducts. Professors Tanon and Martel, members of the Academy of Medicine, have condemned the practice of adding bicarbonate of soda to milk powder and of "Chloropicrine" as preservative for milk. They also disapprove the method of oxygenating by pressure recommended by the Germans. Among other measures to be taken, the conference defined two categories of milk: (1) recognized controlled and cooled milk and (2) ordinary milk. At a conference at the academy of medicine, Professor Lesne mentioned that only 70,000 liters of pasteurized milk are distributed daily in Paris. On account of the difficulty in obtaining clean milk from the producers, the bad hygienic condition of containers and the unsatisfactory means of transport, he proposes to create two categories of "pasteurized" milk: Grade A, containing fewer than 30,000 germs per cubic centimeter, and grade B, in which the number of germs does not exceed 100,000 per cubic centimeter.

Pulmonary Embolism

At the forty-ninth congress of the French Association of Surgery, held from October 7 to 12, Fontaine of Strasbourg and Redon of Paris reported the use of ephedrine, atropine and sodium bicarbonate in combination as a preventive for pulmonary embolism. Among other therapeutic measures they used stellate infiltration, intravenous injections of procaine and infiltration of the phrenic nerve with anesthetics. Successful results occurred in fewer than 30 per cent. Adams-Ray of Stockholm reported 3 deaths from pulmonary embolism out of 221 cases treated, in comparison with 47 deaths out of 264 case not treated with anticoagulants. Luzuy of Blois encountered 57 cases of embolism in 8,000 patients operated on. He employed ephedrine, morphine and atropine intramuscularly and procaine intravenously.

Acute Intoxication by Carbon Monoxide in the Paris District

In a special issue of the *Semaine des hôpitaux* Léon Binet, dean of the Paris Faculty of Medicine, Michel Conte and Henri Cabau explained that the number of persons poisoned by carbon monoxide has risen from 500 in 1929 to 550 in 1939, 2,000 in 1941 and 3,833 in 1944. The mortality has increased from 249 in 1938 to 1,046 in 1944: 45 per cent for men, 35 per cent for women and 20 per cent for children. The authors find that these cases are due to the imprudence and the negligence of the users, to which is to be added the bad state of the pipes, the bad adjustment of burners and especially in 1944 the use of "tire-gaz" (draw gas) a special apparatus used by consumers to compensate for the lowering of pressure and of heating power due to the shortage of coal. A gas leak is the most dangerous, as the percentage of carbon monoxide in the gas of the city of Paris increased from 13 per cent in 1935-1940 to 20 per cent in 1946 (during the winter of 1944 it rose to 29 per cent). On the other hand the odor of the gas is less conspicuous than before the war. Of 136 cases of poisoning treated by Léon Binet and Michel Conte, 23 patients (13 per cent) died. L. Binet emphasizes the importance of oxygen therapy as long as the coma persists. He also uses camphor injections. These physicians criticize the use of carbon dioxide on patients who breathe well and also the practice of blood-letting. Lumbar puncture is to be practiced cautiously; in 13 cases the meningeal reaction appeared only some days after the poisoning. In serious cases hyperazotemia is the rule and gives an indication of the prognosis.

Penicillin Therapy in Rheumatism

In the center for penicillin therapy for rheumatism at the Cochin Hospital (Paris) F. Coste, L. Auquier and J. Nehbil treated 84 cases of various kinds of rheumatism. They employed penicillin intramuscularly with an average daily dose of 300,000 units for eight to ten days and an average total dose of 2,400,000 to 3,000,000 units. Recently they increased the daily dose to 1,000,000 units for eight to ten days. They confirm the value of penicillin therapy in subacute gonorrheal rheumatism and in many chronic forms. In 16 cases of gonorrheal rheumatism there were 4 excellent results, 6 good, 3 partially good and 3 failures. In 14 cases of infectious rheumatism, postanginal, postgrippal and postscarlatinal results were 1 excellent, 6 good, 3 partial and 4 failures. In 26 cases of chronic polyarthritis there were 7 good results and 19 failures.

Conservative Operation for Cancer of the Rectum

At the forty-ninth congress of the French Association of Surgery d'Allaine and Vernejoul reported the results of an operation for removing high tumors of the rectum by the abdominal-sacral route, in which the sphincter apparatus was conserved. Low tumors were removed by the abdominal-perineal approach. A temporary artificial anus was employed which is kept open for two or three months.

Treatment of Herpes Zoster by Globulins of Varicella Convalescents

At a meeting of the Société des Hopitaux of Algiers, Zermati and Mutin report in 2 new cases of rapid cures of herpes zoster by varicella globulins. This confirms the observations on 2 cases already reported by Benhamou in a recent paper on the globulin therapy of infectious diseases.

George Baigerie Jobson ⊕ Franklin, Pa.; Harvey Medical College, Chicago, 1900; specialist certified by the American Board of Ophthalmology, American Board of Otolaryngology and the American Board of Plastic Surgery; member of the American Academy of Ophthalmology and Oto-Laryngology; fellow of the American College of Surgeons; past president of the Venango County Medical Society; served as a member and president of the board of education; affiliated with Oil City Hospital; died October 21, aged 77, of myocarditis.

Helen Jeffery Kelly, Milwaukee; University of Minnesota Medical School, Minneapolis, 1939; interned at Swedish Hospital in Minneapolis; diplomate of the National Board of Medical Examiners; formerly connected with the Kentucky State Board of Health in Louisville; died October 29, aged 43, of accidental barbiturate poisoning.

Arthur Samuel Kitchen ⊕ Escanaba, Mich.; University of Toronto Faculty of Medicine, Toronto, Canada, 1899; fellow of the American College of Surgeons; past president of the Delta County Medical Society; served as a member of the city council; on the staff of St. Francis Hospital; died October 30, aged 71, of coronary occlusion.

Edward Newton Lillard, Madison, Va.; Medical College of Virginia, Richmond, 1901; member of the American Medical Association; died October 9, aged 74, of carcinoma of the throat.

Wilbur Wallace McCleary, Remer, Minn.; Chicago Medical College, 1889; died October 22, aged 79, of coronary occlusion.

Robert Sherwood McGeachy, New Bern, N. C.; Bellevue Hospital Medical College, New York, 1894; member of the American Medical Association; served during World War I; health officer of Craven County since 1939; formerly health officer of other counties; died in St. Luke's Hospital October 9, aged 74, of burns received when a gas water heater exploded in the basement of his home.

Ady Royal McKeown, Letts, Iowa; University of Colorado School of Medicine, Denver, 1911; served during World War I; died in the University Hospital, Iowa City, October 29, aged 63, of gunshot wounds.

Elsie Reed Mitchell, Berkeley, Calif.; Colorado School of Medicine, Boulder, 1897; served with the Red Cross in France during World War I and later served with the Near East Relief; died October 8, aged 74, of coronary thrombosis.

Henry Eugene Mitchell, Birmingham, Ala.; University of Tennessee Medical Department, Nashville, 1893; member of the American Medical Association; died in the Norwood Hospital October 11, aged 79, of bronchopneumonia and fractured right hip incurred in a fall.

Paul Morrison, St. Cloud, Fla.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1895; served during World War I; at one time affiliated with the U. S. Public Health Service Reserve and the Veterans Administration Facilities in Lakeland and Memphis, Tenn.; died October 27, aged 77, of hypertensive heart disease.

Nathan F. Mossell, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1882; past president of the National Medical Association; founder of the Philadelphia branch of the National Association for the Advancement of Colored People and co-founder of the Philadelphia Academy of Medicine and Allied Sciences; founder and for many years medical director of the Frederick Douglass Memorial Hospital; died October 27, aged 90.

Andrew Jackson Nellans, Bond Hill, Ohio; Bennett Medical College, Chicago, 1896; died October 12, aged 78.

Herman Frederick Ohswaldt, Oconto Falls, Wis.; Bellevue Hospital Medical College, New York, 1879; died October 22, aged 89, of chronic myocarditis.

John M. Patterson, Winterhaven, Fla.; Medical College of Ohio, Cincinnati, 1902; for many years practiced in Lima, Ohio; died recently, aged 69.

George P. Paulman, Cumberland, Md.; Baltimore University School of Medicine, 1902; Baltimore Medical College, 1906; died October 13, aged 68.

William H. Perry, Louisville, Ky.; Illinois Medical College, Chicago, 1908; a member of the original board of directors of the Red Cross Hospital; died in Anchorage, October 13, aged 86, of chronic myocarditis.

John Dodge Peters, Great Barrington, Mass.; Columbia University College of Physicians and Surgeons, New York, 1904; served during World War I; died in the Fairview Hospital October 20, aged 67, of bronchopneumonia.

Pedro Platou, Brooklyn; Long Island College Hospital, Brooklyn, 1920; fellow of the American College of Surgeons; member of the American Medical Association; began active duty as major in the medical corps, Army of the United States, in July 1942; chief surgeon of the 231st Station Hospital in England; promoted to lieutenant colonel and at the time of release from active duty in May 1946 held the rank of colonel; on the staff of the Norwegian Lutheran Deaconesses Hospital, where he died October 19, aged 54, of coronary heart disease.

Augustus T. Pollard, Philadelphia; Jefferson Medical College of Philadelphia, 1883; died in October, aged 93.

Earl Van Reed ⊕ La Fayette, Ind.; Medical College of Indiana, Indianapolis, 1905; twice served as county coroner; formerly secretary of the board of health of La Fayette; served during World War I; on the staffs of La Fayette Home and St. Elizabeth hospitals; died October 10, aged 67, of right pulmonary embolus.

Walter A. Rivers, Glenwood, Ga.; Atlanta Medical College, 1894; served as a member of the state board of health; died in a hospital at Dublin September 28, aged 79, of cirrhosis of the liver.

Cunera R. Scheffer, Brookline, Mass.; Northwestern University Woman's Medical School, Chicago, 1894; died recently, aged 78, of bronchopneumonia.

Lewis Shirar, Flora, Ind.; Eclectic Medical Institute, Cincinnati, 1901; died October 7, aged 86, of bronchopneumonia.

Frederick Grant Sigman ⊕ Salisbury, N. C.; University College of Medicine, Richmond, 1909; specialist certified by the American Board of Radiology, member of the Radiological Society of North America, Inc., and the American College of Radiology; honorary member of the Medical Society of the State of North Carolina; on the staff of the Rowan Memorial Hospital; died in the University Hospital, Baltimore, October 21, aged 67.

Milton Hamilton Smith, Trumansburg, N. Y.; United States Medical College, New York, 1881; died September 29, aged 90.

Allen Horatio Thatcher, Chicago; Bennett Medical College, Chicago, 1896; died October 20, aged 79, of coronary thrombosis.

Thomas Gordon Tibby, Oakdale, Ill.; Rush Medical College, Chicago, 1894; cashier of the state bank; died in the Sutherland Hospital, Sparta, October 16, aged 75, of shock and brain concussion received when he fell down the basement steps.

George Thomas Twyman ⊕ Independence, Mo.; Rush Medical College, Chicago, 1915; fellow of the American College of Physicians; served on the Mexican border and in France during World War I; on the staff of the Independence Sanitarium and Hospital where he died October 4, aged 58, of diabetes mellitus and cardiac failure.

Hasseltine Stephens Walker, Brandon, Vt.; Northwestern University Woman's Medical School, Chicago, 1893; died October 23, aged 76.

John William Warner ⊕ Washington, D. C.; University and Bellevue Hospital Medical College, New York, 1909; fellow of the American College of Surgeons and the New York Academy of Medicine; served in France during World War I; formerly on the staff of the Roosevelt Hospital in New York, Doctors, Emergency and Georgetown hospitals; died October 29, aged 63.

Josef Werner, Boston; Julius-Maximilians Universitat Medizinische Fakultat, Würzburg, Bavaria, Germany, 1884; died recently of arteriosclerotic heart disease.

Richard E. Wilkinson, McKenney, Va.; Medical College of Virginia, Richmond, 1897; served on the staffs of the Petersburg (Va.) Hospital and the Stuart Circle Hospital, Richmond, where he died September 29, aged 80, of prostatitis and intestinal ulcer.

Charles B. Williams ⊕ Mineral Wells, Texas; University of Texas School of Medicine, Galveston, 1899; specialist certified by the American Board of Otolaryngology; fellow of the American College of Surgeons; past president of the Palo Pinto-Parker Counties Medical Society; at one time councilor of the Thirteenth District of the State Medical Association of Texas; president of the Texas Ophthalmological and Otolaryngological Society; on the staff of the Nazareth Hospital; died September 4, aged 72, of cerebral hemorrhage.

Charles Osborne Wright, Luverne, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1890; member of the American Medical Association; died in October, aged 82.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Dec 7, 1946

The Milk Conference

An important "Milk Conference" attended by scientists, doctors, producers, industrialists and consumers took place from Sept 11 to 28, 1946, under the presidency of Professor Terroine The minister for public health, the minister for food and representatives of the Academy of Medicine were present Its aim was to establish an effective policy for milk The milk production of 1,400 million liters in 1939 has fallen to 900 million in 1945 At the same time the birth rate has increased and is continuing to increase There is also a lack of condensed milk, France needs 2 300 000 cases, and the French factories produce only 600,000 cases moreover, the import of American condensed milk (360,000 cases yearly) has stopped The French milk production is provided by small holdings; among 1,500,000 families of peasants, over 70 per cent have fewer than 4 to 5 cows, there is a lack of labor and also of food for cattle This dispersion results in a poor quality of milk of 420 million liters of raw milk sold, only 40,000 liters offer any hygienic guarantee Among nurslings it results in 10 per cent of the deaths due to gastroenteritis During the Nazi occupation the fat content of the milk diminished The conference drew attention to the importance of skimmed milk for adults The recent studies on the biology of cholin, by Prof Jeanne Levy, director of the laboratory of the Academy of Medicine for the Control of Remedies and by Ernest Kahane, director of the laboratory of the National Center for Scientific Research, have shown, among other things, that cholin, a substance of first importance for alimentation, is not a constituent of the fat globules but of the plasma of milk The conference also dealt with the addition of antiseptic chemicals to milk and to its byproducts Professors Tanon and Martel, members of the Academy of Medicine, have condemned the practice of adding bicarbonate of soda to milk powder and of "Chloropicrine" as preservative for milk They also disapprove the method of oxygenating by pressure recommended by the Germans Among other measures to be taken, the conference defined two categories of milk (1) recognized controlled and cooled milk and (2) ordinary milk At a conference at the academy of medicine, Professor Lesne mentioned that only 70,000 liters of pasteurized milk are distributed daily in Paris On account of the difficulty in obtaining clean milk from the producers the bad hygienic condition of containers and the unsatisfactory means of transport, he proposes to create two categories of pasteurized' milk Grade A, containing fewer than 30 000 germs per cubic centimeter, and grade B, in which the number of germs does not exceed 100 000 per cubic centimeter

Pulmonary Embolism

At the forty ninth congress of the French Association of Surgery, held from October 7 to 12, Fontaine of Strasbourg and Redon of Paris reported the use of ephedrine, atropine and sodium bicarbonate in combination as a preventive for pulmonary embolism Among other therapeutic measures they used stellate infiltration intravenous injections of procaine and infiltration of the phrenic nerve with anesthetics Successful results occurred in fewer than 30 per cent Adams Ray of Stockholm reported 3 deaths from pulmonary embolism out of 221 cases treated, in comparison with 47 deaths out of 264 case not treated with anticoagulants Luzuy of Blois encountered 57 cases of embolism in 8,000 patients operated on He employed ephedrine, morphine and atropine intramuscularly and procaine intravenously

Acute Intoxication by Carbon Monoxide in the Paris District

In a special issue of the *Semaine des hopitaux* Leon Binet, dean of the Paris Faculty of Medicine, Michel Conte and Henri Cabau explained that the number of persons poisoned by carbon monoxide has risen from 500 in 1929 to 550 in 1939, 2 000 in 1941 and 3,833 in 1944 The mortality has increased from 249 in 1938 to 1,046 in 1944 45 per cent for men, 35 per cent for women and 20 per cent for children The authors find that these cases are due to the imprudence and the negligence of the users, to which is to be added the bad state of the pipes, the bad adjustment of burners and especially in 1944 the use of "tire-gaz" (draw gas) a special apparatus used by consumers to compensate for the lowering of pressure and of heating power due to the shortage of coal A gas leak is the most dangerous, as the percentage of carbon monoxide in the gas of the city of Paris increased from 13 per cent in 1935 1940 to 20 per cent in 1946 (during the winter of 1944 it rose to 29 per cent) On the other hand the odor of the gas is less conspicuous than before the war Of 136 cases of poisoning treated by Leon Binet and Michel Conte, 23 patients (13 per cent) died L Binet emphasizes the importance of oxygen therapy as long as the coma persists He also uses camphor injections These physicians criticize the use of carbon dioxide on patients who breathe well and also the practice of blood-letting Lumbar puncture is to be practiced cautiously, in 13 cases the meningeal reaction appeared only some days after the poisoning In serious cases hyperazotemia is the rule and gives an indication of the prognosis

Penicillin Therapy in Rheumatism

In the center for penicillin therapy for rheumatism at the Cochin Hospital (Paris) F Coste, L Auquier and J Nehbil treated 84 cases of various kinds of rheumatism They employed penicillin intramuscularly with an average daily dose of 300 000 units for eight to ten days and an average total dose of 2,400,000 to 3,000,000 units Recently they increased the daily dose to 1,000,000 units for eight to ten days They confirm the value of penicillin therapy in subacute gonorrheal rheumatism and in many chronic forms In 16 cases of gonorrheal rheumatism there were 4 excellent results, 6 good, 3 partially good and 3 failures In 14 cases of infectious rheumatism, postanginal, postgrippal and postscarlatinal results were 1 excellent, 6 good, 3 partial and 4 failures In 26 cases of chronic polyarthritis there were 7 good results and 19 failures

Conservative Operation for Cancer of the Rectum

At the forty ninth congress of the French Association of Surgery d Allaine and' Vernejoul reported the results of an operation for removing high tumors of the rectum by the abdominal sacral route in which the sphincter apparatus was conserved Low tumors were removed by the abdominal perineal approach A temporary artificial anus was employed which is kept open for two or three months

Treatment of Herpes Zoster by Globulins of Varicella Convalescents

At a meeting of the Societe des Hopitaux of Algiers Zermati and Mutin report in 2 new cases of rapid cures of herpes zoster by varicella globulins This confirms the observations on 2 cases already reported by Benhamou in a recent paper on the globulin therapy of infectious diseases

New Method of Cervicocystopexy

Perin employed a method of closing the urethrovesical angle by fixing the neck and anterior wall of the bladder to the anterior wall of the abdomen for urinary incontinence of women. He reported good results in 30 cases kept under observation for a long period.

Repair of Nervous Tissue

Merle d'Aubigne, Wertheimer and Dejardin stated that autografts give the best results in the repair of exposed nerves of the limbs. Petit Dutaillis obtained good results in 40 per cent of such injuries by using heterografts taken from dogs.

Miscellaneous

Professor Lucienne Random, specialist in research on food, has been elected a member of the Academy of Medicine.

Among the deputies elected November 10 in the new French Parliament were 20 physicians belonging to various political parties.

In agreement with the Ministry for Public Health the French Red Cross put into execution the plan of traveling consultations for nurslings for the rural communities by means of lorries specially fitted for the purpose.

THE NETHERLANDS

(From Our Regular Correspondent)

AMSTERDAM, Dec. 4, 1946.

Recent Developments in Biochemistry

British biochemists, accepting an invitation extended to them by six scientific societies, came to the Netherlands to lecture on November 8 and 9 on recent developments. The meetings were held in the physiologic laboratory of the University of Utrecht. Dr. E. Barton Wright gave a survey on the microbiologic assay of amino acids. He pointed out that ten amino acids are essential for mammalian nitrogen metabolism, according to Rose, and that these and six other amino acids, together with the components of the vitamin B complex, can be estimated by using convenient micro-organisms, bacteria and fungi. Using lactic acid-producing bacteria the lactic acid production is proportional to the concentration of vitamin in the medium. A similar principle applies to the amino acids. Among other advantages, the microbiologic assay affords an easy parallel estimation of essential amino acids whose separation and chemical estimation is still troublesome.

Dr. D. P. Cuthbertson discussed the respective importance of the quality and quantity of protein and its bearing on food, work, blood, organic function, disease, trauma and the healing of wounds.

Prof. A. C. Chibnal surveyed recent research on the chemistry of the protein molecule. He pointed out that by physical methods protein molecules can be studied without destruction, whereas analytic chemistry approaches the problem by resolving the giant molecules into their components. An attempt can then be made to elucidate the links, keeping these components together. Partition chromatography, bacterial enzymes and microbiologic assay are the principal new methods employed for the assay of amino acids in extremely small quantities of material. Improvements are still desirable in the methods for the estimation of monoamino acids, since the utmost accuracy is required for the analysis of protein structure based on these estimations. Analyzing the insulin molecule Chibnal found data suggesting that the submolecule has a molecular weight of 12,000 and three or four of these submolecules are likely to constitute the protein molecule itself. There are four peptide chains in such submolecules, with two terminal glycyl and two phenylalanyl residues, while the component chains are linked together by disulfide bridges. The protein edestin consists of six submolecules of a molecular weight of 50,000, long peptide chains carrying terminal glycine residues. Structural analyses revealed the existence of various hemoglobins.

Prof. W. T. Astbury described recent advances in roentgenologic and related studies of the fibrous proteins. The constituent proteins of keratin, myosin, fibrinogen and epidermis and of collagen, epidermin and tropomyosin are now known both in crystalline and in fibrous form. The two forms are distinguished by their physical properties, fundamental for the physiologic role played by these proteins in coagulation, muscular action and elasticity of microscopic structures. In addition to roentgen ray analysis, the electron microscope aided recent advance also with reference to the relation between the proteins, the polysaccharides and the nucleic acids.

Dr. A. J. P. Martin gave an account of his method of partition chromatography of amino acids and peptides. Essentially the method consists in spreading out an amino acid solution over filter paper by using two immiscible solvents and spotting the substances over the whole surface by the use of an indicator that acts as a kind of developer. Less than a milligram of protein is needed for a qualitative analysis made in this way. Small peptides are similarly analyzed, and the analysis of gramicidin S was used as an example to illustrate the prospects of the new technic. Another method consists in electrophoresis through solid jelly, by which a kind of spectral band arises out of the various components of an amino acid mixture.

Phase Contrast Microscopy

Prof. F. Zernike, physicist of the University of Groningen, ten years ago developed the principle of this new approach to microscopic research, permitting the study of unstained even of living, cells. Small differences in the fraction of light beams are *revealed by sharp contrast under suitably adjusted* microscopes. It is possible to observe nuclei, cytoplasmic constituents, chromosomes, cell division and the part played by the cell constituents during various phases of life. A most instructive film was discovered in Germany by Colonel Bright of the United States Army. It showed the maturation processes of the female and male gametes of grasshoppers. This film was shown to students and to some members of the staffs of various universities in the Netherlands during November. The film showed vividly the fundamental importance of the discovery of Zernike and at the same time proved the research and instructive value of the phase contrast procedure.

Vital Statistics

A sharp rise in births and marriages and satisfactory rates of morbidity, mortality and infant mortality are revealed by a report of *the bureau of statistics in the Netherlands* during the third quarter of the current year. Doctors and pharmacists refuse to maintain their contracts with the health insurance funds without a thorough revision of their respective positions as *regards fees and regulations.* It is emphatically stated that the health services to patients will not be affected by the discussion of these organizational problems.

The introduction of the eight hour work day for nurses in Amsterdam municipal hospitals is expected to contribute to the solution of the standing problem in nursing. A reduction of the hours on duty will make this responsible occupation more attractive.

Personal

Dr. M. J. L. Dols has been appointed to a newly established chair of Popular Nutrition in the University of Amsterdam. He has gained ample experience on this subject while acting as adviser of the Ministry of Agriculture, Fishery and Food.

Bureau of Investigation

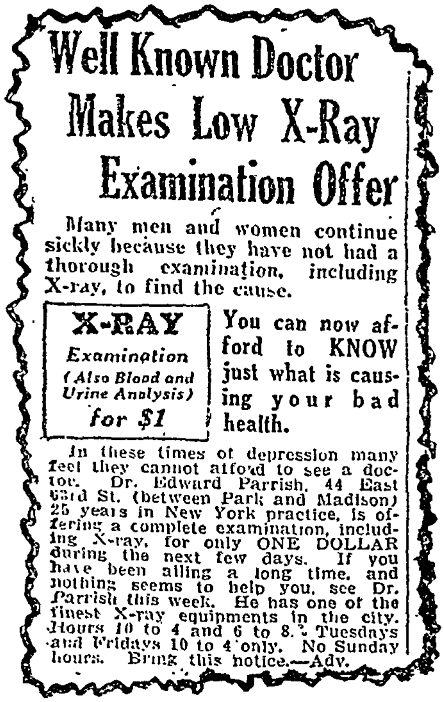
DR. PARRISH'S FRAUDS PERISH

Post Office Bans His "Cures" for Overweight and Underweight from the Mails

Two fraud orders issued by the Post Office Department in recent months against the mail-order activities of Edward Parrish, M.D., of New York indicate that he cared little whether his right hand knew what his left hand was doing. For some ten years Parrish was advertising "Cal-Par" for reducing; he did not, however, neglect the green pastures on the other side of the fence; he also promoted a nostrum for weight-building called "Dr. Parrish's Prescription B-7." The nostrums advertised as "doctor's prescription," a catch phrase calculated to impress the public, have been legion.

Dr. Parrish was born in Philadelphia in 1873, graduated from Long Island College of Medicine, Brooklyn, in 1898, licensed in New York in the same year and in New Jersey in 1915 by endorsement of his New York credentials. He has apparently lived in a dozen different cities and towns in these two states. Presumably he practiced medicine in most of these places, apparently entering the "patent medicine" business only in later years, though old records show a Dr. Edward Parrish as a testimonial writer for several proprietary products, including one for "Castoria" which appeared in a Chicago newspaper as long ago as 1906.

According to Utica, N. Y., papers in 1918, charges had been brought against Dr. Edward Parrish, then of that city, with the object of having his license revoked by the state. The papers reported that a grand jury, after hearing the charges, brought an indictment charging petty larcency. It was afterward shown that the grand jury had no power to find an indictment for petty larceny. Parrish, who had apparently been an advertiser, seems to have diagnosed a number of perfectly healthy patients as being ill and requiring a considerable expenditure of money and time to be "cured."



Well Known Doctor Makes Low X-Ray Examination Offer

Many men and women continue sickly because they have not had a thorough examination, including X-ray, to find the cause.

X-RAY
Examination
(Also Blood and Urine Analysis)
for $1

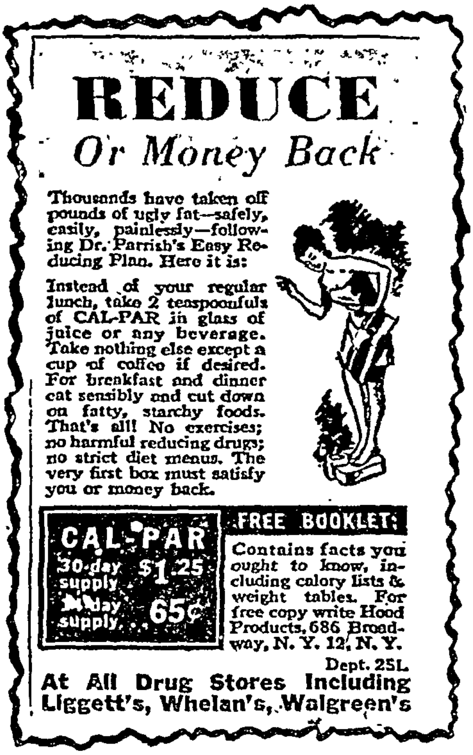
You can now afford to KNOW just what is causing your bad health.

In these times of depression many feel they cannot afford to see a doctor. Dr. Edward Parrish, 44 East 63rd St. (between Park and Madison) 25 years in New York practice, is offering a complete examination, including X-ray, for only ONE DOLLAR during the next few days. If you have been ailing a long time, and nothing seems to help you, see Dr. Parrish this week. He has one of the finest X-ray equipments in the city. Hours 10 to 4 and 6 to 8. Tuesdays and Fridays 10 to 4 only. No Sunday hours. Bring this notice.—Adv.

Parrish's advertisement in a cheap tabloid (1931).

While in Utica, Edward Parrish carried large advertisements in the newspapers, in one of which, in 1920, he offered "One Dollar Examination to the Sick, Using the Wonderful X-Ray." (By 1920 a good part of the public must have become blasé about the "wonders" of this ray, which had then been known for all of 25 years). In 1931 Parrish was playing up his "Low X-Ray Examination Offer" to the public, as shown by an advertisement reproduced on this page and taken from a cheap tabloid.

Then Parrish went into the "reducing" business in New York, playing up "Cal-Par Reducing Plan" under the trade style Cal-Par Corporation. The product "Cal-Par" sometimes bore other company names, such as Hood Products Corporation and Hood-lax Corporation. The last-named concern also sold "Hoodlax," promoted by Victor Lindlahr, whose activities in the food-fad and nostrum fields were dealt with in this department of THE JOURNAL March 24, 1945, page 733, in connection with "Serutan."



REDUCE
Or Money Back

Thousands have taken off pounds of ugly fat—safely, easily, painlessly—following Dr. Parrish's Easy Reducing Plan. Here it is:

Instead of your regular lunch, take 2 teaspoonfuls of CAL-PAR in glass of juice or any beverage. Take nothing else except a cup of coffee if desired. For breakfast and dinner eat sensibly and cut down on fatty, starchy foods. That's all! No exercises; no harmful reducing drugs; no strict diet menus. The very first box must satisfy you or money back.

CAL-PAR
30-day supply $1.25
[illegible]-day supply 65¢

FREE BOOKLET:
Contains facts you *ought to know*, including calory lists & weight tables. For free copy write Hood Products, 686 Broadway, N. Y. 12, N. Y.
Dept. 25L

At All Drug Stores Including Liggett's, Whelan's, Walgreen's

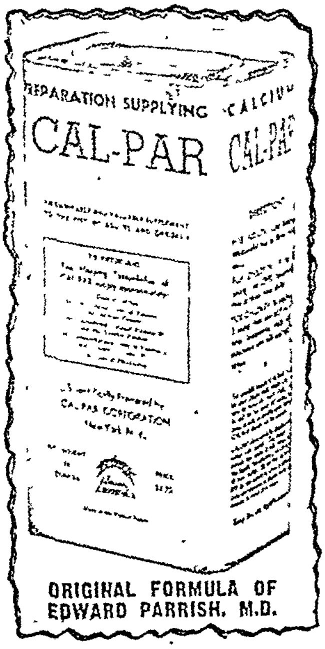
Newspaper advertisement (1946).

In December 1937 Parrish was sending out form-letters with the offer: "For only five dollars I will ship you one half dozen Cal-Par, $1.25 size, and enter a one year's subscription at once for SUCCESSFUL LIVING in your name." This was signed "Edward Parrish, M.D., Editor" and was on the letterhead of "Successful Living—The Publication of Modern Living Health Institute, Psychology Institute of America." There was also the statement: "Official Organ, Body and Mind Foundation, Edward Spencer Cowles, M.D., Founder and Director."

According to a leaflet promoting both Hood-Lax and Cal-Par, the latter nostrum partly originated with Parrish's physician-grandfather, another Edward Parrish. The circular went on to say: "The present formula of Cal-Par was evolved by [the current] Dr. Edward Parrish from his grandfather's old formula as a result of his own practices and researches, and in collaboration with well-known chemists and scientists." Further, the circular described Parrish as "the editor of Modern Living Magazine." This was another of the jobs for a time filled by Victor Lindlahr, previously mentioned. The magazine was largely given over to fads in foods and medicine.

It is interesting to note the actual composition of Cal-Par, the perfecting of which required "collaboration with well-known chemists and scientists"—so "well known," indeed, that Parrish seems to have thought it unnecessary to divulge their identities. A specimen taken from an interstate shipment declared misbranded under the federal Food, Drug and Cosmetic Act in 1943 was reported by government chemists to contain wheat germ, wheat bran, crystalline material and wheat flour. A more detailed list of ingredients was given on the label of the package of Cal-Par involved in the Post Office investigation, which stated, "Active ingredients: wheat embryo (wheat germ), calcium phosphate, calcium carbonate, irradiated yeast, fish liver oil and iron phosphate . . . skillfully compounded with sugar, calcium hypophosphite, calcium glycero-phosphate, calcium lactate and flavoring." Also, there was the claim: "A special dietary product for adults and children."

Cal-Par seems to have been promoted less as a "special dietary product" than as a weight reducer. A 1946 advertisement of it as such is reproduced in this article. Here it is presented as "Dr Parrish's Easy Reducing Plan," with a dietary regimen recommending 2 teaspoonfuls of Cal-Par in any beverage as a substitute for lunch. If the user followed the additional advice given—"for breakfast and dinner eat sensibly and cut down on fatty, starchy foods"—he doubtless would reduce anyhow, without benefit of Cal-Par.



From an advertisement in "Physical Culture" (1938).

The Post Office found that a reader of the Cal-Par advertisements might easily be misled by the assurances, "Reduce 3 to 5 pounds a week yet eat plenty," "You needn't suffer a single hungry moment," and the like, into thinking that he could reduce substantially without any privation or great change in his eating habits. The Post Office hearing also brought out that any resultant weight reduction would be due, not to taking Cal-Par, but to the restricted food intake recommended. Furthermore, expert medical witnesses for the government testified that there could be danger in a person's reducing the promised 3 to 5 pounds per week without evidence from a physical examination that he was fit for such reduction, and also without a physician's supervision of the "course" The business, under the names Cal-Par and Cal-Par Corporation, was declared to be a fraudulent enterprise and was accordingly debarred from the mails on March 8, 1946 Because the concern was receiving only two letters a day addressed to Dr. Parrish himself, his name was omitted from the fraud order, with the provision that one would be issued against him if later he should be found to be conducting the business under his name. The 1946 Cal-Par advertisement reproduced here shows that the product may now be obtained in drug stores, and a booklet on calories and weight tables from Hood Products, New York, by mail.

It was against Edward Parrish himself and the Parrish Medicine Company of New York that another fraud order was issued less than a month later—on April 4, 1946. Theirs was the business, not of reducing weight, but of increasing it, through their "Prescription B-7." In this case Parrish apparently did not claim to be using a "prescription" from his physician-grandfather. Hardly, for the vitamins declared on the label were not known in his grandfather's day. The said label called the preparation "a dietary supplement" and further stated:

> "Each level teaspoonful contains (approximately)
> Malt Diastase... Iron Pyrophosphate 1½ gr.
> Sucrose ....Tribasic Calcium Phosphate 5½ gr.
> Cocoa ....B_1 (Thiamine Hydrochloride) 2 mg.
> Vanillin ....B_2 (Riboflavin) 0.5 mg.
> Vitamin D—135 Units"

The directions called for "1 level teaspoonful, 3 times daily, after meals, in a glass of water or cold milk." The user also was advised to get nine or ten hours' sleep regularly, rest before and after each meal, eat between meals, avoid over-exercise, walk slowly, sit rather than stand when working, and "eat more concentrated, starchy foods, and fatty foods." One might suppose that even the man in the street would know that these procedures would tend to correct underweight if the condition was not due to organic or systemic disease, regardless of any added "prescription," but the promoters would not want to hurt their business by pointing out that fact.

At the hearing of this case the government introduced expert medical testimony showing that at least 50 per cent of all underweight cases are due to systemic disorders and would not be helped by the use of this nostrum or any other, and hence in such cases Prescription B-7 would not produce the "better, healthier figure" promised to all in the advertising. The testimony further showed that there are numerous and varying causes of underweight, including bad habits in sleeping, eating, drinking, smoking and other excesses, as well as overwork, worries and fears, and allergies to certain foods, the latter causing their victims to become food faddists and more or less starve themselves. Hence, the government's medical witness testified, there can be no one treatment that will remove all of the many diseases and other conditions causing underweight. Nevertheless, it was pointed out, Parrish's advertising was addressed to all underweight persons, making no exceptions in offering "the Doctor's own proven method" for gaining weight which "will show you how to fill out your figure" and promising that "you will usually begin to gain from 2 to 3 ounces daily."

The business was accordingly adjudged a scheme to swindle the public, and was debarred from the mails, as previously mentioned.

A prophet without honor in his own bailiwick seems to have been Parrish's lot for a time. The New York State Department of Health, in the May 3, 1943, issue of its official weekly, reported that in the previous year a communication had been sent to Parrish, informing him that the reference to him in an "obesity cure" advertisement (presumably Cal-Par) as "Former Health Officer, State of New York," was misleading, in potentially giving the impression that he had been a state officer. The fact was that he had merely been health officer of an upstate village some 20 years before.

The New York State Board of Medical Examiners found Parrish guilty of advertising and, on July 26, 1946, notified him that his license to practice medicine in that state had been suspended for the six months following that date.

Now the nostrum business that Parrish operated under his own name is banned from the mails, but perhaps he will attempt to continue it by thinking up a new trade style. Meantime the Hood Products, New York, has advertised that Cal-Par is now obtainable in drug stores, and so this imposition on the public credulity persists.

MEDICAL EDUCATION AND LICENSURE

Forty-Third Annual Congress on Medical Education and Licensure, to be held in the Red Lacquer Room, Palmer House, Chicago, February 9 to 11, 1947

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS, AMERICAN MEDICAL ASSOCIATION

Monday Morning, February 10, 9:30

H. G. Weiskotten, M.D., *Presiding*

Current Problems in Medical Education
H. G. Weiskotten, M.D., Syracuse, N. Y., Dean, Syracuse University College of Medicine; Chairman, Council on Medical Education and Hospitals, American Medical Association

Residency Programs in Veterans Hospitals
Round Table Discussion Moderator. C. Gordon Heyd, M.D., New York, Member, Council on Medical Education and Hospitals
Discussants: Paul R. Magnuson, M.D., Washington, D. C., Director of Research and Education, Veterans Administration; Harold S. Diehl, M.D., Minneapolis, Dean, University of Minnesota Medical School; Tinsley R. Harrison, M.D., Dallas, Texas, Professor of Internal Medicine, Southwestern Medical College; J. Roscoe Miller, M.D., Chicago, Dean, Northwestern University Medical School, and Burrell O. Raulston, M.D., Los Angeles, Dean, University of Southern California School of Medicine
General Discussion

Medicine and National Security
Edward L. Bortz, M.D., Philadelphia, Chairman, Committee on National Emergency Medical Service, American Medical Association
Discussion led by Harvey Stone, M.D., Baltimore, Associate Professor of Surgery, Johns Hopkins University School of Medicine, and Harold C. Lueth, M.D., Omaha, Dean, University of Nebraska College of Medicine

Monday Afternoon, 2:00

H. G. Weiskotten, M.D., *Presiding*

Academic Performance of Premedical Veterans
Raymond R. Paty, M.A., LL.D., L.H.D., Atlanta, Ga., Chancellor of the University System of Georgia
Discussion led by Merle Coulter, Ph.D., Chicago, Professor of Botany, University of Chicago; formerly head, Biology Branch, Shrivenham American University, Shrivenham, England

The Hospital Survey and Construction Act
Thomas Parran, M.D., Washington, D. C., Surgeon General, United States Public Health Service
Discussion led by Graham Davis, Battle Creek, Mich., Director, Division of Hospitals, W. K. Kellogg Foundation, Member, Federal Hospital Council

Responsibilities of a Medical School to a Community
James A. Greene, M.D., Houston, Texas, Professor of Medicine, Baylor University College of Medicine
Discussion led by Roy R. Kracke, M.D., Birmingham, Ala., Dean, Medical College of Alabama

Medical Applications of Atomic Energy
Reuben G. Gustavson, Ph.D., D.Sc., L.H.D., Lincoln, Neb., Chancellor, University of Nebraska
Discussion led by Raymond E. Zirkle, Ph.D., Chicago, Director, Institute of Radiobiology and Biophysics, University of Chicago

Monday Afternoon, 5:30

RECEPTION GIVEN TO REGISTRANTS OF THE CONGRESS BY THE AMERICAN MEDICAL ASSOCIATION FOR H. G. WEISKOTTEN, M.D.

Room Fourteen

THE FEDERATION OF STATE MEDICAL BOARDS

Monday—7:00

FEDERATION DINNER

Nazi War Crimes of a Medical Nature
Andrew C. Ivy, M.D., Ph.D., Chicago, Vice President, Chicago Professional Colleges, University of Illinois

Crystal Room

Tuesday Morning, February 11, 9:30

N. D. Buie, M.D., *Presiding*

Presidential Address
N. D. Buie, M.D., Marlin, Texas, President, Federation of State Medical Boards of the United States

Foreign [illegible]
[illegible] Ph.D., Chicago, Secretary, Council on Medical [illegible] American Medical Association

Medical Licensure in California
Frederick N. Scatena, M.D., Sacramento, Calif., Secretary, California Board of Medical Examiners

The Oral Test in Licensure Examinations
Edwin S. Hamilton, M.D., Kankakee, Ill., Member, Professional Examining Committee, Illinois Department of Registration and Education

A Proposed Uniform Basic Science Law
Orin E. Madison, Ph.D., Detroit, President, American Association of Basic Science Boards

Recent Legislation Affecting Medical Licensure
J. W. Holloway Jr., Chicago, Director, Bureau of Legal Medicine and Legislation, American Medical Association

Tuesday—12:30

FEDERATION LUNCHEON

Room Nine

Tuesday Afternoon, 2:00

Present Day Trends in Medical Licensure
Round Table Discussion. Moderator: N. D. Buie, M.D.
Moderator: N. D. Buie, M.D.
Discussants: Victor Johnson, M.D., Frederick N. Scatena, M.D., Edwin S. Hamilton, M.D., Orin E. Madison, Ph.D., and J. W. Holloway Jr.

Tuesday Afternoon, 4:00

Business Session — Reports of Committees — Election of Officers — Installation of President-Elect

ADVISORY BOARD FOR MEDICAL SPECIALTIES

Sunday Morning, February 9, 9:30

Basic Science Training Preparatory to American Board Examinations
Round Table Discussion—Open Meeting

Sunday Afternoon, 1:30

Business Meeting

Sunday—8:00

Joint Meeting: Council on Medical Education and Hospitals of the American Medical Association, Advisory Board for Medical Specialties and Executive Council of the Association of American Medical Colleges

Crystal Room

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in The Journal, Dec. 28, page 1105.

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Part III.* Chicago, Jan. 9-11. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology: *Written. Part I.* Various centers, Jan. 17. *Oral.* Los Angeles, April 11-12. Sec., Dr. P. M. Wood, 745 Fifth Ave., New York.

American Board of Dermatology and Syphilology: *Written.* Various centers, March 24. Final date for filing application is Feb. 17. *Oral.* New York City, April 25-27. Sec., Dr. George M. Lewis, 66 E. 66th St., New York 21.

American Board of Internal Medicine: *Written.* Chicago, March 17. *Oral.* Chicago, April 24-26. Final date for filing application is Feb. 15. Asst. Sec., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

American Board of Neurological Surgery. *Oral.* Examination to be given during the Summer. Applications for examination will be accepted until Feb. 15. Sec., Dr. P. C. Bucy, 912 S. Wood St., Chicago.

American Board of Obstetrics and Gynecology: *Part II.* Pittsburgh. June 1-7. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Ophthalmology: *Oral. All Groups. Parts I and II.* Chicago, October 1947. Final date for filing application is March 1. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Me.

American Board of Otolaryngology: *Oral.* St. Louis, April 16-19. Chicago, Oct. 7-11. Sec., Dr. D. M. Lierle, University Hospitals, Iowa City, Ia.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Contracts: Hospital's Failure to Furnish Hospital Services—Good Faith of Staff Physicians.—The plaintiff sued for damages alleged to have resulted from the refusal of the defendant hospital to furnish hospital services to which plaintiff's wife claimed to be entitled. From a judgment in favor of the plaintiff the defendant appealed to the court of appeals of Alabama.

The defendant hospital entered into a contract with the De Bardeleben Coal Company under the terms of which it agreed to furnish hospitalization to the coal company's employees and their families. Among other things, the contract provided:

> No employee or any member of his family shall be admitted to the hospital (other than in accident cases) except upon written request of the doctor regularly employed by the Corporation or the patient's family physician.
>
> Upon such written request of the attending physician a member or members of the "STAFF" shall examine all applicants for hospitalization in order to determine whether or not hospitalization is necessary, or whether or not the disease or condition is such as is included or excluded from the hospital under the terms of this contract. In the event it should be excluded from the hospital under the terms of this contract or it is determined that no hospitalization is necessary, the "STAFF" will advise the employee and/or his family and/or his attending physician the diagnosis and findings revealed by said examination in order that the employee and/or his family may be properly treated by his own physician.

One of the regularly employed physicians of the coal company attended the plaintiff's wife and in the course of his treatment referred her to the defendant hospital on June 1, 1944. On her arrival at the clinic of the hospital she was given a physical examination by Dr. Anderson, one of the staff physicians, and Dr. Carraway, chairman of the board of directors of the institution. Dr. Anderson reported back to the company physician that the patient did not require hospitalization at that time and recommended a treatment for her to follow, with instructions to return in ten to fourteen days. She returned, feeling no better, on June 19. Again she was examined, again defendant was of the opinion that no hospitalization was needed and again she was advised to take a course of treatment and to return at a later date if no improvement was shown. Instead of returning to the defendant a third time, however, the plaintiff's wife went to another physician, who advised hospitalization. On June 22 she was admitted to another hospital, where she remained about twenty days and underwent an operation for the removal of her uterus. She testified that she has felt fine since the operation.

The defendant first argued that the evidence does not sustain the necessary proof that there was a demand for performance on the part of the plaintiff or his wife or a refusal to perform on the part of the defendant. Under the terms of the contract this is a condition precedent to a right of action for its breach. The jury was privileged, said the court, and it was its duty, to consider all the facts and circumstances disclosed by the evidence in its effort to find whether or not there was a demand for performance and a refusal thereof. This inquiry would include a consideration of the conduct of the parties involved. It cannot be successfully contended, said the court, that a formal demand or refusal was required. If it was made known to the hospital authorities that hospitalization was expected, and the course of action of the authorities was such that the jury could reasonably infer that hospitalization was denied, these essential conditions would have been met. In support of the plaintiff's case the following testimony of his wife appeared:

> Q. Did you ask to be admitted to the hospital at that time; that is, on the 19th of June? A. Yes, sir, I did.

The defendant also argued that, since the contract in question provides that the hospital staff shall determine whether or not hospitalization is necessary or required, plaintiff is precluded from inquiring into the good faith of the decision so made and is compelled to accept its judgment as final and conclusive of the right to claim a breach of the contract to furnish hospitalization. The court of appeals said that it is a court's duty to adhere to the express stipulations of a written agreement and not change by implication the manifest intention of the contracting parties. This responsibility of the court must, however, yield to a reasonable construction in an effort to secure and safeguard the real intention of the parties in the light of their mutual understandings and the objects and rights intended to be accomplished and protected. The court said it had been unable to find any case construing a contract exactly like the instrument here involved. However, in a case in which a contract obligated one of the contracting parties to furnish labor or material, payment therefor being based on the contigency that the recipient of the services or the purchaser of the goods be satisfied, the court has said:

> So, where, by the terms of a contract to do a piece of work or perform services, the excellence of which is not a mere matter of taste or fancy, or to furnish a piece of machinery or other articles the suitableness of which involves a question of mechanical fitness to do certain work or accomplish a certain purpose, the one party warrants the work or article to be satisfactory to the other, the weight of authority is, though the cases are not entirely harmonious, that there can be no recovery when the employer or purchaser is in good faith dissatisfied.

The contract in this case is not different in principle and a contrary construction would afford opportunity for one contracting party to strike down at will benefits intended to be conferred by the written instrument. It is reasonable to assume that this was not the intention but that the parties were dealing on the basis of justice and fairness. In conclusion, the court said that, considering all the evidence as disclosed by the record and the reasonable inferences that may be drawn therefrom, the lower court properly submitted this issue to the jury. The judgment of the lower court in favor of the plaintiff was affirmed.—*Norwood Hospital, Inc., v. Howton, 26 So. (2d) 427 (Ala., 1946).*

Medical Practice Acts: Distinction Between Prescription and Sale in Relation to Revocation of License for Unlawful Sale of Narcotic Drugs.—The petitioner was convicted in a federal court of unlawful sale of morphine sulfate in that he prescribed such drug to an addict, the prescription being filled by a druggist in good faith without knowledge that the prescription was unlawfully used. Accordingly the Board of Regents revoked the petitioner's license to practice medicine. This action of the board was upheld by the Supreme Court, appellate division, on the theory that a sale and prescription were the same thing (*Tonis v. Board of Regents of University of State of New York*), 58 N. Y. S. (2d) 766, J. A. M. A. **130:**818 [March 23] 1946). From such adverse ruling, the petitioner appealed to the court of appeals of New York.

The Education Law justifies the revocation of a license to practice medicine for a conviction of an act constituting a felony under the laws of the state of New York. While the "sale" of a habit-forming drug is a felony, "to prescribe" taken alone is merely a misdemeanor. Respondent argued however that, while petitioner would have been guilty of a misdemeanor if no sale had followed, still, since a sale was made (although by an innocent person, the druggist), the act of prescribing became a felony because the petitioner thus participated in a sale. The argument, said the court, might be persuasive under the internal revenue code, where there is no differentiation between "sell" and "prescribe"; the New York law, however, follows a definite plan. Public health law section 422 lists eight prohibited acts. The unlawful issuance of a prescription by a physician is to "prescribe," as indicated in sections 422 and 427. It is not to "sell," as prohibited in section 422 and defined in section 421, subdivision 10. To hold otherwise, said the court, would be to remove the word "prescribe" from section 422, despite the fact that the legislature has written it in alongside the word "sell."

Accordingly the ruling of the Appellate division was reversed and the matter remitted to the Board of Regents for further proceedings.—*Tonis v. Board of Regents of University of State of New York, 67 N. E. (2d) 245 (N. Y., 1946).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. *Requests should be accompanied with stamps* to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

32:277-410 (Sept.) 1946

On Einthoven's Triangle, Theory of Unipolar Electrocardiographic Leads and Interpretation of Precordial Electrocardiogram. F. N. Wilson, F. D. Johnston, F. F. Rosenbaum as P. S. Barker.—p. 277.

*Effect of Salicylates on Acute Rheumatic Fever. H. A. Warren, C. S. Higley and F. S. Coombs.—p. 311.

*Refractory Case of Subacute Bacterial Endocarditis Due to Veillonella Gazogenes Clinically Arrested by Combination of Penicillin, Sodium Para-aminohippurate and Heparin. L. Loewe, P. Rosenblatt and E. Alture-Werber.—p. 327.

Cardiac Output in Heart Failure. J. R. E. Suarez, J. C. Fasiolo and A. C. Taquini.—p. 339.

*Renin in Essential Hypertension. A. C. Taquini and J. C. Fasciolo. —p. 357.

Parasternal Leads in Tricuspid Insufficiency. G. M. Ellis and N. W. Brown.—p. 364.

Persistence of Juvenile Pattern in Precordial Leads of Healthy Adult Negroes, with Report of Electrocardiographic Survey on 300 Negro and 200 White Subjects. D. Littmann.—p. 370.

Electrocardiographic Changes Occurring During Upper Respiratory Infections. D. Young.—p. 383.

Effect of Salicylates on Acute Rheumatic Fever.—Warren and his co-workers observed acute rheumatic fever in 186 young adults under three different therapeutic regimens. Some were treated with small doses of salicylate given only to relieve symptoms. Others received large doses by mouth until all evidence of rheumatic activity had subsided. A third group received sodium salicylate intravenously for one week followed by large oral doses. The use of sodium salicylate in amounts of 10 to 16 Gm. per day reduces the temperature more quickly in acute rheumatic fever than do small doses. Large doses are advantageous in the treatment of acute rheumatic pericarditis. Doses of 10 to 16 Gm. per day will not prevent the development of cardiac damage or the progression of preexisting heart disease. Large doses will not shorten the period of rheumatic activity any more than small amounts, and they will not prevent the development of polycyclic attacks of rheumatic fever. The routine use of sodium salicylate by intravenous infusion is not warranted by the evidence presented to obtain a rapid elevation of the plasma salicylate level, to maintain a high plasma level or to affect the fever or sedimentation rate. If large amounts of salicylate are given either orally or intravenously the premonitory signs of toxicity must be recognized early and the dose must be reduced to prevent progression of the symptoms. The use of large amounts of salicylate may offer some advantage in the first weeks of therapy and may bring about a rapid reduction of the fever and alleviation of the symptoms, but the continued administration of large amounts of this drug until the sedimentation rate is normal is of questionable value.

Refractory Case of Subacute Bacterial Endocarditis.—Loewe and his associates report a case of subacute endocarditis due to Veillonella gazogenes. Massive doses of sulfonamides were ineffective. Twelve courses of penicillin therapy of varying length, combined at times with adjuvants such as sulfonamides and heparin, failed to sterilize the blood stream, although progress of the infection was retarded during the year of this treatment. Dosages of penicillin up to 10 million units per day by the continuous intravenous route were nontoxic and well tolerated. A total of 466,670,000 units of penicillin was used during this period. In vitro studies revealed bacteriostasis for the organism at 10 units of streptomycin and penicillin per cubic centimeter. The minimum lethal dose was 10 units per cubic centimeter and 30 units per cubic centimeter respectively for streptomycin and penicillin. With a constant concentration of 10 units per cubic centimeter of penicillin, the bacteriostatic and minimum lethal dose of sodium para-aminohippurate was 16 mg. and 63 mg. respectively per hundred cubic centimeters. This contrasts with bacteriostatic and lethal doses of 40 mg. and 163 mg. respectively of sodium para-aminohippurate alone per hundred cubic centimeter. With concentrations of sodium para-aminohippurate varying from 20 to 50 mg. per hundred cubic centimeters the minimum lethal dose of penicillin against the infecting organism was lowered as much as 15 units per cubic centimeter. These data were clinically applied with satisfactory results by the simultaneous daily intravenous administration of penicillin and sodium para-aminohippurate in doses of 10 million units and 240 Gm. respectively over a period of sixteen days. Heparin was also incorporated. This is the first case in which sodium para-aminohippurate has been used with penicillin in the clinical arrest of an infection otherwise highly resistant to the action of penicillin alone.

Renin in Essential Hypertension.—Taquini and Fasciolo used the indirect method of Muñoz and his associates for the detection of renin. This method is capable of detecting about 0.1 unit of human renin in 10 cc. of plasma. Its sensitivity is from five to ten times greater than the direct method of Leloir and his co-workers. The authors made their studies on 23 hypertensive patients with and without impairment of renal function. They were unable to detect renin in the arterial or venous plasma of these patients. They feel that these findings do not disprove the renal origin of human hypertension. Actually, renin has been detected in the plasma of dogs after a short period of complete ischemia of the kidney, and in the renal and arterial blood in the acute phase of hypertension produced by partial but severe ischemia of the kidney. Renin has not been demonstrated in the renal or arterial blood of chronically hypertensive dogs. In human beings small amounts of renin were found in the renal vein after a short period of complete ischemia and in the acute hypertension of a few cases of eclampsia and fulminating glomerulonephritis but not in chronic hypertension. The fact that it has not been possible to detect renin in the blood of chronically hypertensive dogs or of patients with essential hypertension neither supports nor negates the hypothesis that renin is the pressor substance involved. Since renin is found by existing methods in the acute phase of renal hypertensive disease and in complete ischemia of the kidney but not in the chronic stage of the disease, the possibility exists that renin may appear in the blood as an autolytic product of the kidney. It is also possible that renin may initiate the pressor mechanism, which later proceeds without its presence.

American Journal of Medicine, New York

1:315-450 (Oct.) 1946

Influence of Respiration on Circulation in Man, with Special Reference to Pressures in Right Auricle, Right Ventricle, Femoral Artery and Peripheral Veins. H. D. Lauson, R. A. Bloomfield and A. Cournand. —p. 315.

*Clinical Syndrome of Potassium Intoxication. C. A. Finch, C. G. Sawyer and J. M. Flynn.—p. 337.

*Clinical Manifestations of Subacute Bacterial Endocarditis Caused by Streptococcus S. B. E. L. Loewe and Erna Alture-Werber.—p. 353.

*Radiophosphorus as Treatment of Choice in Primary Polycythemia. L. A. Erf.—p. 362.

Reciprocal Influences of Bronchial Asthma and Pregnancy. V. J. Derbes and W. A. Sodeman.—p. 367.

Potassium Intoxication.—According to Finch and his associates too low or too high concentrations of serum potassium interfere with muscle contraction. Accumulation of potassium in the human body is lethal when it reaches a level in the serum of about 10 to 10.5 miliequivalents per liter (39 to 41 mg. per hundred cubic centimeters), owing to its effect on the myocardium. Potassium intoxication results in widespread impairment of neuromuscular function. It produces a characteristic sequence of electrocardiographic changes, impaired contraction of the heart recognizable by auscultation, and final arrest of the heart in diastole. Flaccid paralysis may also be present, involving the extremities and to a lesser degree the trunk but sparing the cranial nerves for the most part. Two cases with elevation of serum potassium manifesting this clinical syndrome are described. Following administration of sodium chloride, both paralysis and electrocardiographic changes reverted toward normal.

Endocarditis Caused by Streptococcus S. B. E.—Loewe and Alture-Werber deal with the clinical manifestations caused by infection with Streptococcus s. b. e., with particular reference to the increased mortality resulting from its resistance to therapy. In a consecutive unselected series of 115 cases of subacute bacterial endocarditis due to nonhemolytic streptococci treated with a combination of penicillin and heparin, Streptococcus s. b. e. was identified as the etiologic agent in 40 of the 68 patients in whom the infecting organism was classified. A large majority of the patients infected with Streptococcus s. b. e. proved to be refractory to penicillin in standard dosage although the organism was readily inhibited by penicillin in vitro. A comparison of type of streptococcus, in vitro penicillin sensitivity, treatment statistics and outcome indicates the futility of predicting the clinical response without knowledge of the presence or absence of Streptococcus s. b. e., which was in a large measure responsible for the treatment failures and fatalities in this series of 115 cases. All 6 recurrences were due to this organism, as were all 4 intracranial hemorrhages. Whenever the presence of this organism is suspected, a dosage of penicillin at a level of at least 2 million should be established for a span of not less than eight weeks. Persistence with lesser dosages invites failure.

Radiophosphorus in Primary Polycythemia.—Primary polycythemia appears to be an acquired disease in which there is a hyperplasia of the marrow and an abnormal increase of the total blood volume as well as elevated red blood cell, white blood cell and platelet levels in the peripheral blood. Associated findings are splenomegaly, elevated basal metabolic rates and elevated blood uric acid levels. The duration of primary polycythemia varies between ten and fifteen years. Secondary polycythemia is a condition in which the peripheral red cell level is elevated usually in an attempt to overcome anoxemia. The duration of secondary polycythemia is determined by the process to which the polycythemia is secondary. Familial polycythemia is a congenital disease characterized by numerous small red blood cells but normal hemoglobin levels, normal rates of basal metabolism and normal blood uric acid levels. Familial polycythemia is not incompatible with a normal human life span. Radiophosphorus effectively inhibits mitosis of normoblasts in cases of primary polycythemia but not of secondary polycythemia. Thirty cases of primary polycythemia are reported that to date had 41 satisfactory remissions following the use of radiophosphorus. One patient with secondary polycythemia did not respond to radiophosphorus, as was expected. Radiophosphorus is the treatment of choice for primary polycythemia at present.

American Journal of Ophthalmology, Cincinnati

29:1215-1354 (Oct.) 1946

Study of Lewisite Lesions of Eyes of Rabbits. Ida Mann, A. Pirie and B. D. Pullinger.—p. 1215.
Macular Edema. A. J. Bedell.—p. 1228.
Relation Between Maternal Vitamin A Intake, Blood Level and Ocular Abnormalities in Offspring of Rat. Blanche Jackson and V. E. Kinsey.—p. 1234.
Intraocular Manifestations of Acute Disseminated Lupus Erythematosus: Report of Case. F. L. P. Koch and W. P. McGuire.—p. 1243.
*Nutritional Amblyopia in American Prisoners of War Liberated from Japanese. S. M. Bloom, E. H. Merz and W. W. Taylor.—p. 1248.
Changes in Angioscotomas Associated with Oral Administration of Evipal. A. I. Fink.—p. 1258.
Role of Lens Substance in Experimental Gonorrheal Iritis. M. J. Drell, Marjorie Bohnhoff and C. P. Miller.—p. 1263.
Spontaneous Rupture of Lens Capsule in Anterior Lenticonus. L. H. Ehrlich.—p. 1274.
Contusion Cataract of Anterior Lens Capsule. H. F. Sudranski. —p. 1281.
Statistical Review of 367 Blinded Service Men, World War II. F. H. Thorne.—p. 1285.

Nutritional Amblyopia in Liberated Prisoners.—Bloom and his associates present the clinical picture of American soldiers liberated after an extended confinement in Japanese prison camps under conditions of severe malnutrition. The study was done on 33 soldiers captured in April and May 1942 on Bataan and Corregidor and liberated in early 1945. The development of early symptoms was observed by one of the authors while a prisoner. The residual findings were observed by the other two collaborators while the patients were hospitalized in an army eye center in the United States. During the period from liberation to arrival at this eye center the patients had received an adequate diet and supplemental vitamin therapy and had returned to approximately their normal weight. Malnutrition due to a deficient diet can cause an optic atrophy manifested by defective vision, scotomas and pallor of the nerve head. The deficiency seems to be due to a lack of vitamin B_1, since the diet was highly deficient in this vitamin. The symptoms occurred coincidentally with beriberi and were relieved by thiamine when administered in the early stages of the deficiency. If treatment is not instituted early enough the condition becomes irreversible, as witnessed by the lack of improvement after administration of intensive vitamin therapy at the army eye center in the United States. Peripheral neuritis and optic atrophy were the only residual abnormal findings made at the eye center on patients who had suffered severe malnutrition over a period of years.

American Practitioner, Philadelphia

1:1-56 (Sept.) 1946

Problem of Sterility Today. M. E. Davis.—p. 1.
Testicular Dysfunction: Diagnosis and Treatment. A. Segaloff.—p. 15.
Treatment of Empyema with Penicillin. E. M. Ory.—p. 23.
Clinical Significance of Hoarseness. L. H. Clerf.—p. 28.
Practical Aspects of Mammary Disease in Female. C. F. Geschickter. —p. 31.
Child Behavior Problems and Physician in Practice. B. S. Veeder. —p. 37.
Community Plan for Psychiatric Treatment of Veterans. F. G. Ebaugh. —p. 41.
Malignancy of Thyroid Gland. P. B. Hardymon and H. H. Bradshaw. —p. 47.
Dental Care for Children. T. J. Hill.—p. 51.

American Review of Tuberculosis, New York

54:97-190 (Aug.) 1946

Minimal Tuberculosis in Negro: Study of Negro Patients Discharged from Robert Koch Hospital with Minimal Tuberculosis Between 1927 and 1942. S. S. Romendick and A. A. Bonner.—p. 97.
Simple and Practical Method of Obtaining Complete Bronchograms. J. K. Poppe.—p. 104.
Bronchography in Tuberculosis: Clinical Study. L. B. Boyer.—p. 111.
Oleothorax: Reevaluation, with Final Report of 101 Cases. R. H. Browning, E. S. Ray and L. Rotenberg.—p. 122.
Dietaries in Tuberculosis Sanatoriums: Report of Approximate Nutritional Evaluation of Thirty-Four County Tuberculosis Hospital Dietaries during 1943 and 1944. Jan Sedgwick.—p. 128.
Tuberculous Pleurisy with Effusion: Manifestation of Extrapulmonary Tuberculosis. E. G. Jones and Myrtle Dooley.—p. 133.
*Tuberculosis as Occupational Hazard During Medical Training: Report of Case Finding and Follow-Up Study, with Effective Control Program for Tuberculosis in Women Medical Students. Sarah I. Morris. —p. 140.
*Tuberculin Reactors: Interpretation and Evaluation of Certain Data. H. H. Dash, A. R. Masten, C. F. Taylor and O. S. Levin.—p. 159.
Sarcoidosis: Report of 5 Cases with 1 Autopsy. G. F. Hogan.—p. 166.
Retardants to Growth of Tubercle Bacilli: Effect of Caramelization on Growth. H. J. Corper and C. Clark —p. 179.
Tubercle Endotoxoid (Grasset) in Experimental Tuberculosis in Guinea Pigs. W. H. Feldman and H. C. Hinshaw.—p. 183.

Tuberculosis as Occupational Hazard During Medical Training.—According to Morris a potential hazard exists when medical students are intimately exposed at their most vulnerable age to tuberculous patients and materials. The influence of sex on the prevalence of tuberculosis is still controversial. Data to the present support the claim of an earlier onset and earlier peak of mortality in women than in men. As comparisons of male medical students with students of nursing are misleading because their average age and duties are not comparable, it has been thought wise to report the experience at the woman's medical school while developing a program for the study of tuberculosis in women medical students. The survey covered the period from 1932 to 1944. A total of 449 students were observed. Fifty-six cases of the disease have been analyzed. Disease occurs earlier and progresses more rapidly in women than in men. Necropsy service and the use of tuberculous patients in demonstrations for physical diagnosis and clinical training constitute the chief sources of infection. When withdrawal of diseased students is delayed or students return before full stabilization, disease progression, relapse and spread to others may be expected. An adequate control program against tuberculosis in medical schools and hospitals is imperative. This should include case finding and follow-up programs in medical schools, establishment of safer technic in necropsy rooms, laboratories, clinics and wards of hospitals, obligatory entrance and periodic examinations of interns and residents, early care of all tuberculous patients and routine examinations of all college and hospital personnel, including ambulatory and bed patients

Tuberculin Reactors—Dash and his associates state that tuberculin testing for diagnostic case finding surveys has proved itself reliable by intracutaneous (Mantoux—with proper amount of tuberculin) and transcutaneous technics (Corper) A tuberculin test should be employed diagnostically in the event that finding surveys should reveal as close to 100 per cent as possible the number of cases of active tuberculosis verifiable by clinical and other diagnostic means, the test should give a minimum of tuberculin reactors among persons without tuberculous disease, the test should be easy to administer, it should cause minimum discomfort it should be readily interpretable and give reliable results and it should be of minimum cost and duration Most of the confusion relating to the number of reactors desired in a tuberculin test has been occasioned by a misunderstanding of the use to which such a test is to be put An entirely different problem exists in the use of a tuberculin test for purposes of screening persons who may have a tuberculous infection but do not have any verifiable tuberculous disease Such a tuberculin test must meet two conditions It should detect to a high degree specific tuberculoallergic individuals, and it should give a minimum of nonspecific reactions

Archives of Otolaryngology, Chicago

44:253 376 (Sept) 1946

*Neurinoma of Facial Nerve K Kettel —p 253
Stenosis of Nasopharynx and Its Correction V H Kazanjian and E M Holmes —p 261
*Concussion Deafness J A Stewart and D W Barrow —p 274
Tuberculosis of Tonsils D Bernstein —p 280
Penicillin Administered Locally in Treatment of Disease of Nasal Accessory Sinus Evaluation of Bacterial Sensitivity E P Cardwell —p 287
Auditory Acuity of Artillerymen and of Rifle Coaches H M Patt —p 298
Gradenigo's Syndrome Review of Literature Since 1926 and Report of Case Complicated by Frontal Sinusitis W J Knauer —p 303
Diseases and Defects in Aircrew Trainees VII Ear, Nose, Throat and Oral Cavity D S Hall —p 319
Peroral Endoscopy L H Clerf, J R Fox and J A Fields —p 337

Neurinoma of Facial Nerve.—According to Kettel, neurinomas arise from the cells of the sheath of Schwann and are composed partly of Schwann cells and partly of connective tissue but do not contain true neural tissue The author reports a case in which a neurinoma somewhat larger than a hazelnut was removed from the pars descendens of the facial nerve of a woman aged 32 The clinical picture differed from that outlined in earlier reported cases The paralysis need not remain complete but may disappear, to recur later on The paralysis may persist for years without the tumors being visible in the acoustic meatus Severe pain may be present almost constantly for years

Concussion Deafness—Stewart and Barrow studied, with the aid of an audiometer and by whispered and spoken voice, 100 gunnery instructors assigned to both shotgun and 0 50 caliber machine gun ranges Each of them had normal hearing prior to assignment The length of service varied between six weeks and thirty months and the average was ten months On the ranges firing is almost continuous for seven and one half hours a day The noise level on ranges where forty or more 0 50 caliber machine guns are firing is high Men involuntarily duck, clasp their hands over their ears and have an almost uncontrollable impulse to run away when they first go on the range It is as if they were struck a physical blow by a mass of sound, but they soon become adjusted to the noise The noise of gunfire produces loss of hearing beginning in the high tones (2 048 to 11 584 cycles per second) among gunnery instructors When severe all tones are affected There was wide variation in individual susceptibility The average loss of hearing for both ears was 20 decibels The length of exposure necessary to produce damage varies widely from person to person After ten to twelve months of service on the range, further deterioration occurred slowly if at all Tinnitus was a complaint in 50 per cent of the men and was the most annoying symptom Since damage occurs insidiously and since damage to the conversational range is late few persons appreciate their handicap until it is far advanced Cotton plugs in the external auditory canal have not been effective in preventing loss of hearing There has not been significant improvement six months after cessation of exposure, and it is believed that the loss of hearing will be permanent

Archives of Pathology, Chicago

42:245 358 (Sept) 1946

Epidemic Poliomyelitis Pathologic Observations on Human Material. J A Luhan —p 245
*Primary Hyperparathyroidism Report of 5 Cases that Exemplify Special Features of this Disease (Infarction of Parathyroid Adenoma Oxyphil Adenoma) E H Norris —p 261
Functioning of Fetal Kidney as Reflected by Stillborn Infants with Hydroureter and Hydronephrosis L J Wells and L T Bell —p 274
Experimental Cholesterol Arteriosclerosis Changes Produced in Skeletal Muscle R Altschul —p 277
Atherosclerotic Valvular Disease of Heart C T Ashworth —p 288
Reaction of Reticuloendothelial Cells to Subcutaneous Injections of Cholesterol Experimental Animals, Mice Edna H Tompkins —p 299
Systemic Multicentric Lipoblastosis C G Tedeschi —p 320

Primary Hyperparathyroidism—Norris studied the cases of parathyroid adenoma collected at the Army Institute of Pathology, 5 of which exemplify many typical characteristics and a number of important special features of primary hyperparathyroidism In these 5 cases the tumor was single and of moderate size In 3 the adenoma was associated with hypercalcemia, hypophosphatemia and the skeletal changes of osteitis fibrosa cystica generalisata, in 2 of these 3 cases there were manifestations of renal calcifications and lithiasis In 1 case, in which a severe state of hypoparathyroidism (hypocalcemia and convulsions) had been present at first clinical observation, there was nearly complete infarction of the parathyroid adenoma In 1 case the tumor was a true oxyphil adenoma This is a rare neoplasm It was not associated with skeletal or renal lesions Although more than 300 cases of adenoma of the parathyroid glands have been reported, knowledge of primary hyperparathyroidism is still incomplete It provides a favorable situation for analyzing the function of the different kinds of parathyroid cells in an effort to correlate their histologic structure and chemical activity Such study promises an advance toward understanding the normal physiologic and metabolic functions of these cell types

Arkansas Medical Society Journal, Fort Smith

43:89-104 (Sept) 1946

Modern Concepts of Cardiovascular Disease Long Range Care in Cases of Myocardial Infarction and Angina Pectoris C T Chamberlain —p 89
Acute Surgical Infections of Kidney T D Brown —p 91
Use of Nasopharyngeal Radium Applicator J W Smith —p 94

43:105-122 (Oct) 1946

What is Wrong with Dyspeptic Whose Findings Are All Negative? W C Alvarez —p 105
Modern Concepts of Cardiovascular Disease Treatment of Subacute Bacterial Endocarditis C T Chamberlain —p 111

Journal of Immunology, Baltimore

54:1-106 (Sept) 1946

Studies on Chemotherapy of Viruses in Psittacosis Lymphogranuloma Group I Effect of Penicillin and Sulfadiazine on Ten Strains in Chick Embryos G Meiklejohn, J C Wagner and G W Beveridge —p 1
Id II Effect of Penicillin and Sulfadiazine on Seven Strains in Mice R W Wiseman, G Meiklejohn, D B Lackman, J C Wagner and G W Beveridge —p 9
Heterologous Principle in Human Cancerous Liver Its Effect on Brown Pearce Tumor H S Penn and E M Jacobsen —p 17
Psittacosis Vaccines Prepared from Chick Embryo Tissues J C Wagner G Meiklejohn L C Kingsland and H W Hickish —p 3
Role of Antibodies in Experimental Drug Resistance of Trypanosoma Equiperdum R J Schnitzer Lillian C Lafferty and M Buck —p 47
Isolation of Virus of Lymphogranuloma Venereum from 28 Patients Relative Value of Use of Chick Embryos and Mice Margaret J Wall —p 59
Applicability of Skin Tests for Sulfonamide Hypersensitivity in Children H W Fink I Burton and W I Wheeler —p 65
Salmonella Infections in the U S A Second Series of 2 000 Human Infections Recorded by the New York Salmonella Center E Seligmann I Saphra and M Wassermann —p 69
Studies in Human Malaria V Complement Fixation Reactions M M. Mayer and M Heidelberger —p 83
Use of Yolk Sac Antigens for Skin Tests in Rabbits Infected with Virus of Meningopneumonitis H R Morgan —p 103

Journal of Mount Sinai Hospital, New York

13:119-166 (Sept.-Oct.) 1946

*Influence of Stilbamidine upon Multiple Myeloma. I. Snapper.—p. 119.
Primary Pulmonary Carcinoma: Report of 2 Cases. H. Neuhof.—p. 128.
Cervicomediastinal Infection: Case Report. A. H. Aufses.—p. 129.
Spontaneous Pneumothorax: Report of 2 Cases. H. Hennell.—p. 133.
Liver Abscess with Perforation into Lung: Case Report. M. S. Harte.—p. 136.
Spontaneous Recovery from Subacute Bacterial Endocarditis in Interventricular Septal Defect. J. Stricker.—p. 140.
Essays on Biology of Disease. E. Moschcowitz.—p. 143.

Stilbamidine in Multiple Myeloma.—Since the globulin content of the serum is also frequently increased in multiple myeloma, Snapper has tried stilbamidine for the treatment of multiple myeloma. In the beginning the myeloma patients were treated with fifteen injections of 150 mg. of stilbamidine given daily or every other day. More recently they have continued the treatment over a longer period and increased the total dose of stilbamidine to 5 or 6 Gm. Stilbamidine seems to have a specific influence on the severe bone pain which is so frequently a symptom of multiple myeloma. Often after the fourth injection, sometimes later in the treatment, the pain disappears. In 9 out of 14 patients an arrest of the progress of the disease has been realized. Two patients who were complete invalids before treatment have resumed their normal activities for sixteen months. The disease is arrested but not cured; the bone marrow of these patients still contains considerable numbers of myeloma cells. Favorable results have been obtained only in patients who followed a diet poor in animal protein. Animal protein evidently blocks the action of the drug, as is indicated by the negative results of the stilbamidine treatment obtained in myeloma patients fed on a diet rich in animal protein. Apart from this clinical improvement, stilbamidine causes morphologic changes in the myeloma cells. Large basophilic granules containing ribose nucleic acid appear in the cytoplasm which have a tendency to become confluent. None of the other bone marrow elements show comparable granules or inclusions.

Journal of Urology, Baltimore

56:399-514 (Oct.) 1946

*Pathogenesis of Cardiovascular and Renal Changes Which Usually Accompany Malignant Hypertension. H. Selye and Helen Stone.—p. 399.
Thrush of Urinary Bladder: Case. M. K. Moulder.—p. 420.
Cancer in Diverticulum of Bladder: Pitfall to Resectionist. S. R. Muellner.—p. 427.
Sulfathiazole Suppositories in Treatment of Vulvovaginitis in Children. F. W. Schacht and K. E. Barber.—p. 429.
Multiple Fibromata of Tunica Vaginalis Testis or Proliferative Type of Chronic Periorchitis: Report of 2 Cases. W. E. Goodwin and V. Vermooten.—p. 430.
Multiple, Benign, Fibrous Tumors of Tunica Vaginalis Testis. W. E. Goodwin.—p. 438.
Adenomatoid Tumors of Epididymis: Report of 3 Cases. J. T. Codnere and J. E. Flynn.—p. 448.
Cholesteatoma of Epididymis. P. R. Kundert.—p. 454.
Carcinoma of Penis. H. Lenowitz and A. P. Graham.—p. 458.
Repair of War Wounds of Bulbous and Membranous Urethra Using Split Thickness Skin Grafts and Penicillin. J. T. MacLean and J. W. Gerrie.—p. 485.
Injuries to Genitourinary Tract in European Theater of Operation. J. N. Robinson, O. S. Culp, H. I. Suby, C. W. Reiser and R. B. Mullenix.—p. 498.
Report on Status of Urology in Europe. J. K. Lattimer.—p. 508.
Débris Scraping Cystoscopic Fulgurating Device. R. L. Dourmashkin.—p. 512.

Malignant Hypertension.—Selye and Stone state that constriction of the aorta in rats by means of a ligature between the origins of the two renal arteries may be gaged so as to inhibit urine formation completely in the kidney whose artery originates caudad to the ligature. The tubular epitheliums of such kidneys show no signs of degeneration or necrosis, although the nephronic lumens disappear and the organ assumes the appearance of an endocrine gland. Such "endocrine kidneys" continue to elaborate humoral substances which elicit changes characteristic of hypertensive disease in the remaining cardiovascular system. This shows that the formation of urine by a kidney is not a necessary prerequisite for its endocrine activity. The compensatory hypertrophy normally elicited by unilateral nephrectomy is inhibited by a purely "endocrine kidney" on the other side. Hence the growth of renal tissue must be partly regulated by renal humoral agents. The "endocrine kidney" is still responsive to the renotrophic effect of pituitary extracts. Under their influence, numerous mitotic divisions appear in the tubular epitheliums, and the weight of the organ increases. Partial constriction of the renal artery protects the kidney against nephrosclerosis. This protection is effective against humoral substances formed by this kidney and against the nephrosclerosis produced by anterior pituitary preparations. From this it is concluded that increased intravascular pressure is essential for the production of nephrosclerosis, since the humoral substances (renal and hypophysial) sufficient to produce lesions in the normal kidney do not cause nephrosclerosis in the "clamped" kidney of the same animal. Periarteritis nodosa and a special type of myocarditis (similar to that seen in acute rheumatic fever) can be produced by adrenal hypophysial and by renal hormones.

Kansas Medical Society Journal, Topeka

47:385-444 (Sept.) 1946

Traumatic Intracranial Hemorrhage Following Closed Head Injury. L. L. Bernstein.—p. 385.
Poliomyelitis: Clinical and Epidemiologic Considerations. H. A. Wenner.—p. 393.
Treatment of Poliomyelitis. G. M. Martin.—p. 396.

47:445-492 (Oct.) 1946

Hazards in Utilization of Metallic External Skeletal Fixation in Treatment of Fractures. M. Cleveland.—p. 445.
Pancreatic Lithiasis. E. H. Fischer.—p. 455.
Preoperative and Postoperative Parenteral Therapy. G. Owens.—p. 458.

Missouri State Medical Assn. Journal, St. Louis

43:663-732 (Oct.) 1946

Symposium on Kidney and Hypertension: *Significance of Recently Developed Tests of Renal Function.* W. H. Olmsted.—p. 677.
Clinical Correlations Between Renal Disease and Hypertension. E. Massie.—p. 680.
Renal Lithiasis: Recent Advances in Treatment. D. K. Rose.—p. 682.
Renal Insufficiency in Diseases Other Than Those of Kidneys and Urinary Tract. E. H. Reinhard.—p. 693.
Spontaneous Rupture of Spleen in Benign Tertian Malaria. W. W. Fellows.—p. 699.

43:735-812 (Nov.) 1946

Experiences in Blood Banking in Europe and Their Application to Civilian Practice. H. Agress.—p. 751.
Clinical Significance of Rh Factor. H. C. Allen.—p. 753.
*Recent Observations on Anemia in Scurvy. L. J. Wade, E. W. Czebrinski and Genevieve Wood.—p. 756.
Auditory Impairment in Returned Service Personnel. J. C. Howard Jr.—p. 762.
Safety of Mercurial Diuretics. J. L. Horner.—p. 765.

Anemia in Scurvy.—Wade and his associates report 4 cases of anemia and clinical evidence of malaria. The anemia improved under ascorbic acid therapy in each instance. Chronic vitamin C deficiency alone, or in combination with other deficiencies such as iron or the erythrocyte maturing factor, may produce anemia which will not respond optimally until adequate ascorbic acid therapy has been instituted. In the presence of scurvy it is probably unnecessary to resort to iron or liver until one has observed the hematologic response to ascorbic acid.

New England Journal of Medicine, Boston

235:399-450 (Sept. 19) 1946

Twelve Years' Experience in Roentgenotherapy for Chronic Arthritis. J. G. Kuhns and S. L. Morrison.—p. 399.
Delayed Primary Attack of Vivax Malaria. I. M. London, C. A. Kane, E. F. Schroeder and H. Most.—p. 406.
Quartan Malaria Occurring Subsequent to Blood Transfusion:' Report of Case. W. J. H. Fischer Jr. and C. L. York.—p. 411.
Pelvic Inflammatory Disease: Survey of 300 Consecutive Cases, with Special Reference to Treatment. J. E. Tritsch, I. H. Saxe and E. Schneider.—p. 414.
Occupational Dermatoses. J. G. Downing and S. J. Messina.—p. 416.
Periarteritis Nodosa. Multiple Infarcts of Liver and Kidneys.—p. 441.
Perinephric Abscess Secondary to Renal Cell Carcinoma.—p. 444.

35:451-500 (Sept. 26) 1946

Clinical Malnutrition in Italy in 1945: Nutritional Status of Selected Population Groups. J. Metcoff and A. J. McQueeney.—p. 451.
Nontraumatic Spontaneous *Pneumothorax Among Military Personnel.* S. Cohen and J. M. Kinsman.—p. 461.
Plasma Alpha Amino Nitrogen Levels in Patients with Thermal Burns. S. M. Levenson, M. A. Adams, R. W. Green and others.—p. 467.
Occupational Dermatoses. J. G. Downing and S. J. Messina.—p. 472.
Aleukemic Leukemia (? Monocytic or Lymphatic), with Massive Liver Involvement.—p. 491.
Tuberculous Salpingo-Oophoritis.—p. 493.

New Orleans Medical and Surgical Journal

99:143-200 (Oct.) 1946

Socialized Medicine: The Phantom Approaches. H. Mahorner.—p. 143.
*Five Years' Experience with Electric Sleep (Electric Shock) Treatment. C. S. Holbrook.—p. 147.
Use of Biopsies in Diagnosis of Cancer. C. E. Dunlap.—p. 153.
Carcinoid of Appendix with Metastasis. V. D'Ingianni.—p. 158.
Otolaryngology in General Practice. O. E. Van Alyea.—p. 161.
Management of Common Eye Injuries in General Practice. F. W. Raggio Jr.—p. 165.
Rh Factor and Erythroblastosis Fetalis: Case. C. L. Langford.—p. 169.
Penicillin in Acute Bacterial Endocarditis. E. L. Wagner, P. B. Reaser and G. E. Burch.—p. 171.
Paroxysmal Auricular Fibrillation. M. W. Talbot Jr.—p. 173.

Electric Sleep (Shock) Treatment.—Holbrook says that during the past five years electric sleep or shock therapy has been used in 3,070 patients at several hospitals for mental diseases in New Orleans. A total of 27,231 treatments were given without fatality and with relatively few dislocations and fractures. Electric sleep therapy has so many advantages over insulin and metrazol that it has almost completely replaced these forms of treatment. While electric sleep therapy is used to treat dementia precox and hysteria, it is of paramount value in involutional melancholia, reactive depressions, the depressions which are part of the manic-depressive syndrome, and other emotional disorders. It is used in treatment of the excited phase of manic-depressive syndrome but the results are not so brilliant. All depressions should receive this form of therapy even when the psychosis is of several years' duration. In schizophrenia better results are obtained through electric sleep treatment than by any other method, but in certain cases of schizophrenia insulin is superior to electric sleep treatment. The electric treatment is also valuable in maintaining certain chronic cases at a higher social adjustment than could be otherwise obtained.

North Carolina Medical Journal, Winston-Salem

7:337-452 (Aug.) 1946

Four Dimensional Medicine. C. W. Roberts.—p. 337.
Extracts of Information on Basic Science Law. I. Procter.—p. 341.

7:453-532 (Sept.) 1946

The Soul of Medicine. H. H. Shoulders.—p. 453.
Complications of Colles's Fractures. L. D. Baker and H. J. Schaubel.—p. 457.
Role of Guanidine in Therapy of Myasthenia Gravis. L. B. Froke, S. F. Margoshes and G. T. Harrell Jr.—p. 462.
Present Status of Penicillin in Treatment of Syphilis. P. G. Reque and J. L. Callaway.—p. 469.
Meningitis Due to Hemophilus Influenzae: Report of 2 Cases Successfully Treated with Penicillin and Sulfadiazine. J. T. Doyle.—p. 473.

Radiology, Syracuse, N. Y.

47:213-318 (Sept.) 1946

*External Therapeutic Use of Radioactive Phosphorus: I. Erythema Studies. B. V. A. Low-Beer.—p. 213.
Bone Changes of Leukemia in Children. B. S. Kalayjian, P. A. Herbut and L. A. Erf.—p. 223.
*Radiographic Chest Survey of Patients from Dachau Concentration Camp. A. D. Piatt.—p. 234.
New Roentgen Sign in Extrahepatic Biliary Tract Disease. S. Brown and F. G. Harper.—p. 239.
Radiographic Study of Spondylolisthesis with Special Reference to Stability Determination. I. Meschan.—p. 249.
Energy Absorption and Integral Dose in X-Ray and Radium Therapy: Review. C. W. Wilson.—p. 263.
Osteopoikilosis: Report of 2 Cases. M. C. Archer and K. W. Fox.—p. 279.
Roentgen Diagnosis of Ascariasis in Alimentary Tract. D. C. Weir.—p. 284.
Symmetrical Renal Rotation About the Vertical Axis. B. R. Van Zwaluwenburg and L. M. Pascucci.—p. 287.
Dose of Radiation. S. J. Hawley.—p. 288.

External Use of Radioactive Phosphorus.—According to Low-Beer the physical properties of radioactive phosphorus (P^{32}) make it suitable for studying the effect of beta particle radiation on the skin. The radioactive phosphorus was an aqueous solution of disodium hydrogen phosphate containing 15 mg. of the salt per cubic centimeter of water. Ordinary thin blotting paper was the most suitable vehicle for the radioactive solution. The intensity of the erythema depends on the amount of exposure. The depth of discernible biologic effect from externally applied radioactive phosphorus was approximately 5 mm. for erythema-producing doses. "Threshold erythema" was produced by an exposure to 34 microcurie hours per square centimeter. Results suggest that radioactive phosphorus might be used in local treatment of certain superficial skin diseases.

Chest Surveys in Dachau Concentration Camp.—Piatt presents a statistical compilation of the roentgen findings in the initial roentgenograms of 2,267 patients in the Dachau concentration camp. Active tuberculosis was demonstrated by x-ray in 626 (27.54 per cent). It is assumed that a large number of the 365 cases of undiagnosed pneumonic densities, peribronchial infiltrations (pneumonitis), pleural effusions and pneumothoraces were of tuberculous causation. The heart shadow of 269 persons (11.8 per cent) was enlarged. A surprising number of enlarged hearts were found in persons with moderately and far advanced tuberculosis, although by far the larger number of cardiac shadows in tuberculous patients were quite small. The prominent hearts in the nontuberculous and tuberculous cases probably represent a hypertrophy or transient dilatation due to an avitaminosis.

Southern Medical Journal, Birmingham, Ala.

39:681-760 (Sept.) 1946

Surgery of War Injuries of Eyelids. A. Callahan.—p. 681.
Simple Aid in Difficult Abdominal Closures. N. A. Schneider.—p. 689.
Guide for Nailing Fractures of Femoral Neck. J. H. Gaston.—p. 690.
Heart Complications in Infectious Mononucleosis: Report of Case. F. J. Geraghty.—p. 693.
*Primary Atypical Pneumonia: Report of 420 Cases with One Fatality During Twenty-Seven Months at Station Hospital. W. C. McCoy.—p. 696.
*Spinal Fluid Protein in Retrospective Diagnosis of Subclinical Poliomyelitis. M. B. Andelman, W. I. Fishbein and A. E. Casey.—p. 706.
Treatment of Early Syphilis with Penicillin. J. L. Callaway, R. O. Noojin, Beatrice H. Kuhn and others.—p. 718.
Effect of Topical Penicillin on Infections of Upper Respiratory Tract. E. E. Menefee Jr. and R. J. Atwell.—p. 726.
Delay in Diagnosing Malaria After Sulfadiazine Therapy: Two Case Reports. S. G. Page Jr. and J. V. McCall Jr.—p. 728.
Hydrogen Ion Concentration (*p*H) of Monilia Albicans Infection and Treatment. K. J. Karnaky.—p. 731.
Management of Diabetes Mellitus During Pregnancy. H. T. Engelhardt and J. P. Melvin Jr.—p. 734.
Physical Therapy in General Practice. G. J. P. Barger.—p. 737.
Results of Removal of Ruptured Intervertebral Disks and Combined Disk-Fusion Operations: Analysis of 288 Operations. H. H. Kuhn and R. G. Neill.—p. 745.

Primary Atypical Pneumonia.—McCoy reports 420 cases of atypical pneumonia observed at the Station Hospital, Camp Rucker, Alabama. One fatal case appeared to be a primary interstitial pneumonitis which became secondarily complicated, resulting in bronchopneumonia and other chest findings. Associated anatomic findings were cloudy swelling of the liver, kidneys and adrenals, acute splenic tumor and testicular atrophy. The diagnosis of atypical pneumonia is based on clinical observation. Significant diagnostic points include roentgen changes with minimal physical findings, negative sputum, relatively normal leukocyte count, low pulse rate and failure to respond to sulfonamides. There was no appreciable correlation between the incidence of common respiratory infections and atypical pneumonia. Despite the minimal physical findings as compared with roentgen evidence of pulmonary involvement, daily examination of the chest during the acute phase of illness in atypical pneumonia showed some physical findings in 94.25 per cent of the cases studied. Complications, unusually mild in this group, included extension of the pneumonic process, pleural involvement and delayed resolution. The treatment of atypical pneumonia is symptomatic. Sulfonamides are valueless; oxygen and transfusions are helpful for the more severely ill patients. Penicillin deserves further evaluation in the treatment of complicated cases.

Spinal Fluid Protein in Subclinical Poliomyelitis.—Andelman and his associates studied contacts, noncontacts and controls of poliomyelitis patients. Spinal fluid examinations were made ten to sixty days after the onset of fever among contacts, noncontacts and controls. One hundred and forty-two spinal fluid examinations were analyzed on 43 contacts who within five to twenty-one days after the exposure developed illness which was either outright poliomyelitis or mild fevers suspected of being this disease and on 45 noncontacts and controls who developed febrile illnesses which were not believed to have been poliomyelitis; also on 39 patients with paralytic and 15 with meningitic forms of the disease. The spinal fluid protein level was above 45 mg in 15 of 19 contact children suspected of convalescing from subclinical poliomyelitis These were examined eleven to forty-five days after the onset of the illness, the spinal fluid being within normal limits in each instance and averaging 27 3 mg Only 10 per cent of 43 control children having acute illnesses other than those primarily affecting the central nervous system had spinal fluid protein elevated above 45 mg, although the general level was significantly raised to 33 mg A base line of 27 mg was found for recovered poliomyelitic patients some fifty to sixty days after onset The increase in the spinal fluid protein in subclinical poliomyelitis confirms the accuracy of the spinal fluid protein as an indicator The 20 to 25 per cent of contact children suspected of convalescing from subclinical poliomyelitis but who had no increase in spinal fluid eleven to forty-five days after onset may nearly all have been suffering from the disease since 20 to 25 per cent of known paralytic cases likewise exhibited normal spinal fluid protein levels during the same period Although the determination of spinal fluid protein levels was recommended or proposed by early workers as a means of detecting nonparalytic poliomyelitis in the convalescent period, this study is first to report its application in a systematic field study The consistent and prolonged rise of the spinal fluid protein level in subclinical poliomyelitis (equal to that in the paralytic form) indicates that this form of the disease is not 'mild," that it is possibly accompanied with lesions of the central nervous system and that it is sufficient to give rise to a lasting immunity.

Surgery, St. Louis

20:445 582 (Oct) 1946

Use of Streptomycin in Experimental Peritonitis J J Murphy R G. Ravdin and H A Zintel —p 445
Traumatic Aneurysms Study of 43 Cases in Overseas General Hospital H L Albright and L A Van Hale —p 452
Case of Costoclavicular Compression of Subclavian Artery Simulating Arterial Aneurysm H B Shumacker Jr —p 478
Battle Casualties From Philippine Islands Summary of Experience with 4 040 Cases H Conway and K B Coldwater —p 482
Air Blast Effect in Cave W B Shelley and S M Horvath —p 493
*Clinical Manifestations of Local Shock and Treatment J E M Thomson —p 498
Malignant Granular Cell Myoblastoma of Gluteal Region L V Ackerman and C R Phelps —p 511
*Dysgerminoma of Ovary W C Custer —p 520
*Use of Tetraethylammonium in Peripheral Vascular Disease and Causalgic States New Method for Producing Blockade of Autonomic Ganglia R I Berry, K N Campbell, R H Lyons and others —p 525
Treatment of Nonunion of Carpal Navicular Bone C J Sutro —p 536
New Method of Bone Plating H L Wenger —p 541
Congenital Esophageal Atresia with Tracheoesophageal Fistula Case Report of Successful End to End Anastomosis M L White and M Birdsong —p 548
Treatment of Esophageal Achalasia or Cardiospasm Report of 4 Patients Treated Surgically H M Schiebel —p 558
Surgical Removal of Large Retroperitoneal Lumbar Ganglioneuroma Case Report R P Reynolds and M O Cantor —p 571

Clinical Manifestations of Local Shock.—According to Thomson, local shock is a clinical sequence of pathologic changes exhibited after severe injuries (particularly crushing) of the extremities characterized by local vasospasm Acting first as a safety reflex to stop hemorrhage and additional trauma, it may result later in capillary dilatation incompetence or decompensation thereby (1) preventing normal tissue metabolism, (2) interfering with the normal interchange of tissue fluids in the region of injury with loss of plasma, (3) piling up the products of trauma, with no effort being displayed toward their evacuation and (4) ending often in degeneration and local death of the tissue From observations on more than 300 rabbits the author concludes that procaine block of the sympathetics controlling a severely injured extremity tends to restore circulatory integrity and equilibrium Stopping vasoconstriction also stimulates capillary competence and the interchange of tissue fluids, organization of a clot the appearance of fibroblasts proliferation of capillaries calcification of necrotic muscle tissue and an early healing process The author does a sympathetic procaine block almost routinely on all severe injuries of the extremities He presents 4 striking examples of a series of 48 cases in which he had experience with stellate and lumbar sympathetic block

Dysgerminoma of Ovary—A girl aged 12 years presented symptoms that led to the diagnosis of a left ovarian cyst Microscopic examination of the surgical specimen disclosed dysgerminoma The child was free from recurrence or metastasis eighteen months later Custer stresses that early diagnosis and operation is the only hope for these patients He is convinced that dysgerminomas are malignant tumors, since all patients who showed extension at the time of operation died of metastases

Tetraethylammonium in Peripheral Vascular Disease and Causalgic States.—Berry and his associates direct attention to the new method of producing a blockage of autonomic ganglions by parenteral injection of the tetraethylammonium ion Tetraethylammonium was injected intravenously or intramuscularly in a 10 per cent solution The intravenous dose ranged from a minimum of 100 mg (1 cc) to a maximum of 500 mg (5 cc) This was injected slowly over fifteen to sixty seconds Intramuscular injections were utilized to prolong the effect of the autonomic blockade only in patients under observation in the hospital These were given in doses less than 20 mg per kilogram of body weight 1 to 1 5 Gm, one-half the dose administered in each buttock Approximately 500 patients have received tetraethylammonium bromide or chloride on one or more occasions either as a diagnostic or as a therapeutic measure or both These patients fall into two general groups, patients with hypertension and patients with peripheral vascular disease and allied disorders The latter group included patients with peripheral arteriosclerosis obliterans, thromboangiitis obliterans, functional vascular disorders including Raynaud s syndrome, livedo reticularis, acrocyanosis and other unclassified vasomotor disorders, causalgias including various types of reflex sympathetic dystrophy, superficial and deep thrombophlebitis, various types of lymphedema post-traumatic edema, scleroderma, endarteritis herpes zoster and postherpetic neuralgias, trench and immersion foot sequelae and a nondescript group of widely varying nature Many of these patients received courses of therapy extending over a period of several days Others received only a single *injection* usually intravenously, or were given periodic weekly or *monthly* injections to produce a sympathetic block as the need arose The drug has proved satisfactory

Texas State Journal of Medicine, Fort Worth

42·351-404 (Oct) 1946

Neuropsychiatric Problems of Returning Servicemen H Ford and T McMillan —p 358
Primary Atypical Pneumonia, with Report of 60 Cases D W Chapman —p 362
Jaundice in Newborn Infant G W Salmon —p 366
Prevention of Syphilis in Newborn C N Frazier —p 372
Frog Test (Xenopus Levis) for Pregnancy C B Sanders —p 375
Interstitial Irradiation Therapy in Carcinoma Originating at Limbus Report of 2 Cases Treated with Radium Element Seeds E M Sykes —p 376
Etiology of Otomycosis Experimental Study W B Sharp, M B John and I M Robison —p 380
External Otitis J T Robison —p 384
Malarial Control in China F K Laurentz —p 386

West Virginia Medical Journal, Charleston

42·241-270 (Oct) 1946

Medical Care Whose Responsibility? C W Meadows —p 241
Prostatic Obstruction and Mental Patient H A Hoffman —p 244
Spontaneous Rupture of Normal and Abnormal Spleen H A Bailey —p 246
Hernia J E Cannaday —p 256

42:271-298 (Nov) 1946

Method of Approach to Psychosomatic Problems in Allergy J H Mitchell and C A Curran —p 271
Medical Care of Veterans E Eastwood —p 279
Tuberculosis Problems in West Virginia E P Wells —p 282
Care of Mentally Ill at Weston State Hospital J L Knapp —p 287
Congestive Failure and Cerebral Accident Case Report F R Whittlesey —p 291

Wisconsin Medical Journal, Madison

45:821-944 (Sept) 1946

True Infective Abacterial Pyuria E J McGinn —p 845
Brucellosis at State of Wisconsin General Hospital E B Cohen —p 847

45:945 1020 (Oct) 1946

'Relapsing and Recurring' Meningitis M J Fox —p 965
Case of Morton s Metatarsalgia (Morton's Toe) Treated by Operation J O Dieterle and J F Kuzma —p 967

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Rheumatic Diseases, London

5:105-140 (June) 1946

Management of Chronic Arthritis and Other Rheumatic Diseases Among Soldiers of the United States Army P S Hench and E W Boland. —p 106

Chronic Rheumatic Diseases in World War 1939 1945 W S C Copeman —p 115.

Chronic Rheumatic Diseases from Services in E M. S. Hospitals. C W. Buckley.—p 122.

Acute Rheumatism J. A Glover p 126

*Lesions in Muscle in Arthritis H I Gibson, G D. Kersley and M H. L Desmarais —p 131

Lesions in Muscle in Arthritis.—Perivascular cellular reactions in the muscles themselves and paravascular lesions in the fibrous and fatty supporting connective tissue were observed by Gibson and his associates in specimens of biopsy material taken from 11 patients with typical rheumatoid arthritis in 10 and with some atypical features in 1 There were 5 men between the ages of 48 and 63 and 6 women between the ages of 33 and 52 Similar changes were found in active and quiescent cases, whether or not they had been treated with gold salts All affected tissues were of mesodermal origin. It is suggested that the noxious agent is a blood borne irritant

British Journal of Experimental Pathology, London

27:211-266 (Aug) 1946

Effect of Administration of p Dimethylaminoazobenzene on Ovarian Functions of Rats C Hoch Ligeti —p 211

Studies on Detoxication of Louse Rickettsia Toxin L. Olitzki and E Buechler —p 220

Spontaneous Crystallization of Protein From Pathologic Human Serum. E Shapiro and E Wertheimer —p 225

*Modification of Human Red Cells by Virus Action I Receptor Gradient for Virus Action in Human Red Cells F. M Burnet, J F. McCrea and J D Stone —p 228

*Id *II. Agglutination of Modified Human Red Cells by Serums from Cases of Infectious Mononucleosis F M Burnet and S. G Anderson —p 236

*Id III Sensitive Test for Mumps Antibody in Human Serum by Agglutination of Human Red Cells Coated with Virus Antigen F M. Burnet —p 244.

Thyrotropic Hormone and Thiourea in Reference to Problem of "Antihormones" M. T. McQuillan and V. M. Trikojus —p 247

Electron Microscope Study of Contents of Hair Cells from Leaves Diseased with Tobacco Mosaic Virus G. Oster and W. M Stanley. —p 261.

Virus Receptor Gradient in Red Cells.—Burnet and his associates define a "receptor gradient" in human erythrocytes for viruses of the mumps-influenza group Cells which have been treated by influenza viruses in addition to losing their agglutinability by some or all of the viruses of the group develop a susceptibility to serum agglutination analogous to the "panagglutinability" described by Thomsen Virus receptors can be removed in almost the order of the receptor gradient by enzymes produced by Clostridium welchi and Vibrio cholerae. The ability of two different types of bacterial products to change the surface character of human red cells so that they become progressively less sensitive to agglutination by viruses is a function of one or more enzymes in the material The possibility that lecithinases are concerned is suggested by the fact that active enzymes of this character are produced by both Cl welchi and the cholera vibrio Two differences in the activity of bacterial enzymes on the one hand and the action of influenza viruses on the other have been observed: 1. Mumps virus receptors are more readily removed by virus action than by vibrio filtrates, and there is a less evident but probably significant difference in the same direction with Newcastle disease virus receptors 2 With vibrio filtrates removal of virus receptors may be almost complete, with little development of serum agglutinability by the cells Unfiltered cultures have usually produced both effects, while older cultures have rendered the cells permanently unstable and therefore unsuitable for testing Should it develop that similar enzymes are an intrinsic part of viruses of the mumps-influenza group, two important possibilities arise: (1) that these enzymes play an essential part in the initial invasion of susceptible cells as well as in adsorption to erythrocytes and (2) that the nature of the enzymes may open up an opportunity for chemotherapeutic studies

Agglutination of Red Cells by Mononucleosis Serums.—Burnet and Anderson show that the virus of Newcastle disease of fowls agglutinates human cells and is eluted therefrom in the same fashion as influenza viruses. Cells treated with amniotic or allantoic fluid preparations of Newcastle disease virus develop a new antigenic character which allows them to be agglutinated to high titer either by experimental Newcastle disease virus immune serum or by most serums from recent cases of infectious mononucleosis in man The changed character of the cells is due to the adsorption to their surface of an agent other than the virus produced during the growth of Newcastle disease virus in chick embryo cells The possible significance of this agglutination reaction as a lead to the etiology of infectious mononucleosis is discussed

Agglutination Test for Mumps Antibody.—Burnet demonstrates that human erythrocytes treated with mumps virus are *specifically* agglutinated by mumps antibody. The reaction can be used as a sensitive quantitative test for antibody in human serum

British Journal of Ophthalmology, London

30:573-644 (Oct) 1946

Incidence of Trachoma in Southern Highlands Province of Tanganyika H Reed —p 573

Corneal Vascularization in Chronic Disease. P A. Gardiner.—p 581

Iridencleisis—Modification D P Smith —p 589

*Sulfonamides and Penicillin in Treatment of Trachoma F. S. Lavery —p 591

Bilateral Detachment of Choroid of Unusual Duration Following Corneoscleral Trephine A F P Parker —p 595

Ophthalmic Experiences in Royal Air Force F R. Neubert —p 601

Sattler's Veil J Dallos —p 607

Conjunctival Findings in Cases of Cold Hemagglutination. S. Gördüren —p 613

Egypt's Contribution During the War to Protection Against Disease Through Care of Eyes of Babies F Massoud —p 617.

Proptosis—*Differential Diagnosis* F Massoud —p 622

Sulfonamides and Penicillin in Trachoma.—The 54 cases of trachoma reviewed by Lavery are analyzed as far as the result of treatment of some of them with sulfonamides and penicillin might be of aid in the evaluation of the therapeutic effects of these drugs Only cases in which inclusion bodies were found, either before or after treatment, are dealt with in this communication The author presents data on 8 cases treated with sulfonamide and on 5 treated with penicillin While the number of cases is too small on which to draw definite conclusions, the author considers it of importance that the inclusion bodies had disappeared in 5 of the 8 patients treated with the sulfonamide drug but in only 1 of the 5 treated with penicillin

British Journal of Tuberculosis, London

40:85-108 (July) 1946

*Relationship Between Primary and Adult Tuberculosis. H J Ustvedt —p 85

Relationship Between Primary and Adult Pulmonary Tuberculosis S R. Gloyne —p 93

*Detection of Tubercle Bacilli by Fluorescence Technic. J W Clegg and A F Foster Carter —p 98

Relationship Between Primary and Adult Tuberculosis.—Ustvedt asserts that the great majority of primary tuberculous infections now take place in the same age groups in which the largest percentage of destructive pulmonary tuberculosis is found The time interval is in most cases less than five years, often only one or two years Primary tuberculosis apparently is sometimes very malignant Destructive pulmonary tuberculosis begins in many cases with a new infiltration which seems to have a metastatic origin The most important practical consequence of this view is that demonstration of the primary infection by tuberculin tests is of decisive importance and that the infection must be carefully watched, particularly in the first few years after it has been contracted.

Detection of Tubercle Bacilli by Fluorescence Technic.—Clegg and Foster-Carter describe an apparatus for the routine examination of pathologic fluids for tubercle bacilli by the fluorescence method. They found the fluorescence method just as accurate, more sensitive and more rapid than the Ziehl-Neelsen technic. They recommend the fluorescence technic to any laboratory where large numbers of examinations for tubercle bacilli are done.

British Medical Journal, London

2:481-524 (Oct. 5) 1946

Medical Experiences in Japanese Captivity. E. E. Dunlop.—p. 481.
Hemoglobin and Protein Levels and Spleen Indexes in Northern Greece: Their Relation to Diet. H. Foy, C. Damkas, V. Mitchell and others.—p. 486.
*Investigation into Certain Tongue Changes in British Troops. B. H. Smith.—p. 489.
Battle Exhaustion: Review of 500 Cases from Western Europe. Eileen M. Brooke.—p. 491.
Abacterial Pyuria Presenting as "Urethritis." A. B. Fieldsend.—p. 493.

2:525-564 (Oct. 12) 1946

Before and After Morton: Historical Survey of Anesthesia. E. A. Underwood.—p. 525.
Recent Advances in Anesthesia. C. L. Hewer.—p. 531.
Theories of Anesthetic Action. J. H. Burn and H. G. Epstein.—p. 533.
History and Development of Anesthetic Apparatus. A. C. King.—p. 536.
Anesthesia Through the Eyes of a Poet. G. Liddle.—p. 539.

Tongue Changes in British Troops.—Smith directs attention to a symptomless tongue condition which was occurring among British troops in India and southeastern Asia commands and which was giving rise to diagnostic difficulties. The principal features of this condition were fissuring, epithelial changes and changes in the architecture of the papillae. The most probable cause was considered to be a nutritional deficiency, probably of riboflavin. However, improvement did not follow treatment with thiamine, riboflavin and niacin; that is, evidence is against the tongue changes being of nutritional origin. The chief object in publishing this paper is to draw attention to the frequency of tongue changes, which are apt to be diagnosed as due to deficiency disease and to enjoin caution in their acceptance as such.

2:565-600 (Oct. 19) 1946

Teeth of 5 Year Old London School Children (Second Study): Comparison Between 1929, 1943 and 1945. May Mellanby and Helen Coumoulos.—p. 565.
*Case of Addison's Disease Successfully Treated by Graft. L. R. Broster and H. Gardiner-Hill.—p. 570.
Lymphocytic Choriomeningitis. B. R. Sreenivasan.—p. 573.
Pathogenicity of Group C (Lancefield) Hemolytic Streptococcus. R. Irene Hutchinson.—p. 575.
Chemical Warfare Experiment Using Human Subjects. H. Cullumbine.—p. 576.

Addison's Disease Successfully Treated by a Graft.—Broster and Gardiner-Hill present the story of a young woman in whom, nine months previous to their seeeing her, a diagnosis of Addison's disease had been made. The authors confirmed this diagnosis, and one of them ingrafted an adrenal gland from a patient with the adrenogenital syndrome (hyperplasia). As a result of this operation the young woman lost her symptoms and signs of Addison's disease, and sodium chloride withdrawal tests showed that her blood sodium no longer fell below normal. The last test (fourteen months after operation) showed that this change had been maintained.

East African Medical Journal, Nairobi

23:225-256 (Aug.) 1946

Interim Notes on Therapeutics of Bismuth, Antimony, Zinc, Iron and Copper Arsanilate in Treatment of Malignant Disease, Syphilis, Yaws, Leprosy, Tuberculosis, Whooping Cough and Some Minor Complaints in the African. J. O. Shircore.—p. 226.
Notes of Some Investigations on Mosquito Larvicides. D. Bagster-Wilson.—p. 239.
*Asthma and Urticaria Following Bee Sting. H. Reed.—p. 245.

Asthma and Urticaria Following a Bee Sting.—Reed reports that a European aged 31, within three minutes after being stung by a bee on the left ear, developed a flushed face, throbbing of the head and swelling of the nasal mucosa. A minute or so later he began to wheeze, and an attack of asthma developed. Epinephrine gave relief from the asthma, but urticaria appeared over the entire body. More epinephrine was injected, and ephedrine was given in tablet form. While the epinephrine and ephedrine controlled the asthma and urticaria, they did not affect the erythema, but this and the irritation cleared in forty-eight hours.

Indian Journal of Medical Research, Calcutta

34:1-206 (May) 1946. Partial Index

Preparation of Antigen from Kedrowsky's Bacillus for Complement Fixation Test for Kala-Azar. Dharmendra, R. Bose and P. C. Sen Gupta.—p. 1.
Vitamin A and Carotene Content of Ghee (Clarified Butter) and "Fortified" Margarine. N. K. De, S. Ranganathan and A. R. Sundararajan.—p. 3.
Effect of Different Fats on Calcium Utilization in Human Beings. K. P. Basu and H. P. Nath.—p. 27.
*Comparative Value of Butter Fats and Vegetable Oils for Growth. K. P. Basu and H. P. Nath.—p. 33.
Destruction of Vitamin B_1 of Some Vegetables During Cooking and Effect of Cooking on Free and Combined Vitamin B_1 of Some Foodstuffs. K. P. Basu and M. C. Malakar.—p. 39.
Effects on Growth in Rats of Butter and Ragi (Eleusine Coracana), Separately and Combined, as Supplements to Poor Rice Diet of South India. Eleanor D. Mason, R. Devadas and J. Frimodt-Möller.—p. 45.
Absorption of Fats from Human Intestine. N. G. Nhavi and V. N. Patwardhan.—p. 49.
Studies on Destruction of Vitamin A in Shark Liver Oil: Part VI. Some Factors Affecting the Stability. S. Dattatreya Rao.—p. 91.
Fluorine and Dental Caries in India. K. L. Shourie.—p. 97.

Value of Butter Fats and Vegetable Fats for Growth.—Basu and Nath found that butter fat when fed to young rats at 3, 6 and 9 per cent levels induced maximum growth at the 6 per cent level. The growth was poor at the 3 per cent level. Comparative tests were then made with mustard, coconut, sesame and peanut oils and with cow or buffalo butter fats, all given at the 6 per cent level. Maximum growth was obtained with cow butter fat. The growth with buffalo butter fat was slightly less. The vegetable oils gave less growth.

Irish Journal of Medical Science, Dublin

250:643-724 (Oct.) 1946. Partial Index

Surgical Anesthesia. T. P. C. Kirkpatrick.—p. 643.
Introduction of Ether and Chloroform to Dublin. J. D. H. Widdess.—p. 649.
Anesthetic Fatalities. J. Beckett.—p. 656.
Status of the Anesthetist. R. W. Shaw.—p. 662.
Intravenous Anesthesia. O. J. Murphy.—p. 696.
Spinal Anesthesia with Hypobaric Percaine. P. Kiely.—p. 704.
Cyclopropane Anesthesia. J. Boyd.—p. 711.
Trichlorethylene Anesthesia. F. W. E. Wagner.—p. 717.

Lancet, London

2:513-550 (Oct. 12) 1946

Sympathetic Control of Blood Vessels of Human Skeletal Muscle. H. Barcroft and O. G. Edholm.—p. 513.
*Psychoneuroses Treated with Electrical Convulsions: Intensive Method. W. L. Milligan.—p. 516.
Effect of Temperature on Sedimentation Rate. K. B. Rogers.—p. 520.
*Treatment of Yaws with Penicillin. K. R. Hill, G. M. Findlay and A. Macpherson.—p. 522.
Uses of Plastics in Surgery. G. Blaine.—p. 525.

Psychoneuroses Treated with Electrical Convulsions.—Milligan describes the treatment of 100 psychoneurotic patients with electric convulsions. The average dose used has been 180 volts at 0.4 second. This produces a convulsion in nearly every case and has the advantage that it eliminates the usual preceding cry, which is helpful when many patients are being treated in a ward. The only precaution taken, apart from the gauze gag, is the use of a dorsal pillow to keep the patient in a position of slight opisthotonos. Radio music helps patients awaiting treatment to pass the time and prevents apprehension. The authors have used an intensive method in many cases, which sometimes involves four treatments a day. Some patients are reduced to the infantile level and then allowed gradually to emerge from the confusional state. During this time simple psychotherapy is given. Occupational therapy is used as an adjuvant. After discharge the patient usually returns to work immediately and reports at the outpatient department for several months. All patients responded well.

Penicillin in Treatment of Yaws.—Hill and his associates report observations on 128 patients with yaws (15 primary, 96 secondary and 17 tertiary) treated with penicillin. The patients were all African children or mothers. The most advantageous method of treatment was a daily injection of 100,000 Oxford units in peanut oil and beeswax up to a total dosage of at least 1,000,000 units. Spirochetes disappeared from the lesions in from nine to twenty-four hours after doses of 50,000 to 200,000 units. There was remarkably rapid healing of the acute lesion in primary and secondary yaws, the average time being nine days. Considerable success was achieved with bony lesions of tertiary yaws. No correspondence could be found in the follow-up investigations between sustained clinical cure and reversal of the Kahn reaction. Twenty patients were given penicillin with either acetylarsol or neoarsphenamine. The results suggest that penicillin followed by a more prolonged arsenical treatment is the ideal therapy for ultimate and permanent cure.

2:551-586 (Oct. 19) 1946

*Carcinoma of Prostate Treated with Estrogen. J. D. Fergusson.—p. 551.
*Diagnosis of Schistosomiasis Intradermal Test Using a Cercarial Antigen. W. Alves and D. M. Blair.—p. 556.
Penicillin in Infancy and Childhood. Jean L. Buchanan.—p. 560.
Observations on Fibrinolysis: Plasminogen, Plasmin and Antiplasmin Content of Human Blood. R. G. MacFarlane and J. Pilling.—p. 562.
Exercise and Cardiac Hypertrophy. A. Abrahams.—p. 565.

Estrogens in Carcinoma of Prostate.—Fergusson carried out repeated biopsies of the carcinomatous prostate and of accessible metastases in order to ascertain the results of estrogen therapy. The neoplasm regressed during treatment in nearly all of 9 cited cases, as was indicated both by microscopy and, in 4 of the cases, by tissue acid phosphatase estimation. However, some cases of prostatic carcinoma do not seem to respond to estrogens. There is some evidence that estrogens are effective against metastases. Investigations carried out to ascertain whether the presence of acid phosphatase in lymph node metastases is pathognomonic of prostatic carcinoma revealed that much acid phosphatase in a lymph node suggests, but does not prove, a primary prostatic cancer, for it was found also in lymph nodes involved by carcinoma of the stomach or of the penis and in some tuberculous lymph nodes. The average survival periods of 23 patients treated with estrogens were longer than those of 27 patients not so treated.

Diagnosis of Schistosomiasis.—Alves and Blair describe the preparation and use of cercarial antigens for intradermal testing in suspected cases of schistosomiasis. A higher proportion of cases of schistosomiasis is revealed by this antigen than can be detected even by repeated microscopic examinations. This skin test is of value also in ascertaining the efficacy of a treatment. Since no negative skin reactors have been found to be passing eggs, the test can be used as a rapid and accurate "screen" in mass treatment campaigns. Its use in indicating the need for further treatment is also outlined.

Quarterly Journal of Medicine, Oxford

15:155-242 (July) 1946

Changes in the Parkinsonian Syndrome in the Twentieth Century. Helen Dimsdale.—p. 155.
Craniofacial Dysostosis: Significance of Ocular Hypertelorism. A. Brown and R. K. Harper.—p. 171.
Epidemiology of 1945 Outbreak of Poliomyelitis in Mauritius. A. M. McFarlan, G. W. A. Dick and H. J. Seddon.—p. 183.
Ocular Manifestations of Tuberose Sclerosis. G. S. Hall.—p. 209.
*Estimation of Prostatic Phosphatase in Serum and Its Use in Diagnosis of Prostatic Carcinoma. Freda K. Herbert.—p. 221.

Estimation of Prostatic Phosphatase in Serum.—Herbert made a study of the diagnostic use of estimations of serum acid phosphate on the basis of 87 cases of prostatic carcinoma, 95 cases of prostatic hypertrophy and 153 cases including a wide variety of diseases. The total acid phosphatase titer is raised in the great majority of cases of prostatic carcinoma with metastases in bone and in a small proportion of cases without demonstrable bone metastases. In order to assist diagnosis in cases in which the serum acid phosphatase is only slightly raised, methods of inactivation of prostatic phosphatase have been studied. The incubation of the serum at 37 C. is not recommended as a routine diagnostic test, but inactivation by alcohol at room temperature gives a specific test for prostatic phosphatase and an approximately quantitative measure of the prostatic fraction of the acid phosphatase.

South African Medical Journal, Cape Town

20:579-614 (Oct. 12) 1946

Some Aspects of Amebiasis in Africans. R. Elsdon-Dew, with technical assistance of R. Horner and D. A. Cameron.—p. 580.
*Prostatectomy in the Tenth Decade: Report of 2 Cases. K. Frater. —p. 587.
South Africa's Food Requirements. T. W. B. Osborn.—p. 588.
Some Practical Points in Anesthesia. J. R. Duffield.—p. 591.
Age of Menarche on Witwatersrand, South Africa. Marie van Castricum. —p. 594.
Theory of Intracellular Energy Production and Its Practical Application. in Cardiovascular Conditions. J. Drummond.—p. 596.
Surgery of Peripheral Nerves. W. Silber.—p. 601.

Prostatectomy in the Tenth Decade.—Frater performed a two stage suprapubic prostatectomy on a man aged 95 and on another aged 92. The first one left the nursing home within three weeks of the removal of the prostate perfectly well. The second one is hale and hearty five years later. The author concludes that with modern anesthesia and postoperative care there is no need to deny the benefit of prostatectomy to the aged.

Schweizerische medizinische Wochenschrift, Basel

76:695-718 (Aug. 3) 1946. Partial Index

Genesis of Exertion Thrombosis. K. Lenggenhager.—p. 702.
Dangerous Factors (Perforation, Hemorrhage) in Roentgenologic Examination of Digestive Tract. Jean-Marc Strasser.—p. 705.
*Latent Tuberculosis of Female Genital Organs: Its Frequency and Importance as Cause of Sterility in Women. I. Halbrecht.—p. 708.

Latent Tuberculosis of Female Genital Organs as Cause of Sterility.—Halbrecht says that of 820 sterile women who were subjected to curettage 45, or 5.5 per cent, were found to have a tuberculous endometritis. Among 54 women with partial or total occlusion of the tubes there were 18, that is, a third, who had tuberculous endometritis. He concludes from these observations that latent genital tuberculosis seems to be rather frequent in apparently healthy women, but particularly in sterile women. This form of genital tuberculosis remains stationary for a long time or permanently, but it nearly always terminates in obliteration of the tubes and thus renders these women sterile. The tuberculous nature of the condition is usually discovered accidentally by a curettage. It is advisable to abstain from surgical treatment in cases of this type, since even curettage may cause serious complications.

76:719-742 (Aug. 10) 1946

Development and Significance of Invisible (Adherent) Lenses. E. Bürki. —p. 719.
Estrogenic Substance in Treatment of Endometritis After Abortion. Rosa Müller-Knapp and H. V. Wattenwyl.—p. 723.
*Quantitative Studies on Plasma Prothrombin: I. Influence of Methylxanthines on Prothrombin Activity of Human Blood Plasma. W. K. Rieben.—p. 725.
Arterial Tension in the Amputated. A. Sliosberg.—p. 728.
Constitutional Hyperthymic Syndrome. N. Pende.—p. 730.

Influence of Methylxanthines on Prothrombin Activity.—Rieben investigated the effect of the methylxanthines on healthy subjects, patients with hepatic disorder and patients with auricular fibrillation. For purposes of comparison the normal values of plasma prothrombin activity were ascertained on 150 adults. Daily fluctuations also were determined. The author concludes that, contrary to the findings of Field and his associates, the use of the methylxanthines does not increase the danger of thrombosis.

Arch. Urug. de Med., Cir. y Especial., Montevideo

28:543-650 (June) 1946. Partial Index

*Bite of the Flax Spider. V. Grille Cendan.—p. 603.

Bite of the Flax Spider.—During the harvest of flax in summer the bite of the flax spider is frequent in rural zones of Uruguay. Grille Cendan observed 6 patients. As a rule the spider attacks when the workers are taking their siesta under a tree. The bite causes acute local pain, which immediately involves the entire extremity and the lymphatic system. The clinical symptoms are mainly motor, with very painful tetanic contractures of striated muscles. Bites on the thoracic muscles cause disturbances of respiration. Opisthotonos and trismus frequently occur. Fever and diminished urination also occur. The symptoms are so characteristic as to make the diagnosis obvious even if the spider has disappeared. The treatment consists in administration of morphine, rest in a quiet dark place, repeated hot baths of twenty minutes' duration, a purgative enema on the second day of the attack and administration of chloral in daily doses of 6 Gm. The treatment is continued for a week or ten days up to recovery.

Revista Chilena de Pediatría, Santiago

17:367-412 (July) 1946. **Partial Index**

*Ambulatory Oral Penicillin Therapy in Gonorrhea in Children. A. Wiederhold and Antonieta Méndez.—p. 367.

Penicillin Therapy in Gonorrhea in Children.—Penicillin was given orally to 26 infants and children with subacute gonorrheal urethritis in boys or subacute vulvovaginitis in very young girls. Duration of the disease varied from five days to three years. Sulfonamide had been given to the majority of the patients without effect. Penicillin was administered by mouth three times daily in doses of 33,000 and 100,000 units every four hours for three consecutive days up to a total dose of 300,000 to 900,000 units. A total dose of 1,500,000 units was given in the course of three consecutive days only in 1 case of acute vulvovaginitis. All patients were clinically and bacteriologically cured. The patients were observed for six months after completion of the treatment. Reactivation tests after either instillation of a 10 per cent solution of strong protein silver or a hypodermic injection of ergotamine tartrate were carried out at intervals during this period. Permanent cure was verified in the majority of cases by absence of gonococci in smears and cultures of urethral and vaginal secretions. In a few cases gonococci reappeared after reactivation tests but disappeared later either spontaneously or after repetition of penicillin therapy.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

90:983-1022 (Aug. 17) 1946

Search for New Sulfonamides. P. Lopes Cardozo.—p. 987.
Acute Dissecting Aneurysm of Aorta. J. van der Minne and J. R. Borst.—p. 991.
Lip-Shaped Vesical Fistula as Preliminary Operation in Prostatectomy. A. Salomon.—p. 996.
Camp Vertigo. J. Kuilman.—p. 1000.
Penicillin in Diphtheria. E. van Wijk and A. P. van der Wey.—p. 1004.
*Intraocular Injections of Penicillin. J. A. van Heuven.—p. 1006.

Camp Vertigo.—Kuilman applies the term camp vertigo to a type of dizziness that was observed among prisoners of war in the Far East. At a hospital for prisoners of war in Batavia, Java, during 1944 and 1945, complaints of dizziness were made by 563 patients, and in 412 of these the diagnosis of camp vertigo was made. This form of vertigo is not to be regarded as a labyrinthine disturbance but is considered the result of a central disturbance of the supranuclear mechanism controlling the synergic movements of the eye. It is thought that the condition is due to avitaminosis. The patients probably had a deficiency of one or more factors of the vitamin B complex. A large number of the patients with this type of dizziness responded favorably to treatment with yeast. A form of bilateral deafness, which was probably also the result of some deficiency, was observed in 43 prisoners of war. In 37 of these 43 patients the camp deafness was combined with vertigo.

Intraocular Injections of Penicillin.—Van Heuven used 2 cc. of penicillin solution (10,000 units per cubic centimeter) for the irrigation of the anterior chamber of the eye. One of the patients, aged 74, had undergone an operation for cataract, which was followed by infection and panophthalmia. The second patient, aged 19, had been hit in the eye with a tennis ball. This patient had developed an ulcer at the margin of the cornea and sclera and a hypopyon. In both patients irrigation with solution of penicillin was followed by disappearance of the hypopyon. In the second patient the irrigation of the anterior chamber was repeated after five days. This was followed by great improvement.

Nederl. Tijdschr. v. Verlosk. & Gynaec., Haarlem

47:1-106 (No. 1) 1946

Fistulas of Urinary Bladder. M. A. van Bouwdijk Bastiaanse.—p. 1.
Hypertension and Eclampsia: Clinical Aspects. J. C. Beker.—p. 18.
Plastic Repair of Ureter Instead of Implantation of Ureter. B. S. Ten Berge.—p. 38.
*Uterine Changes in Besnier-Boeck-Schaumann's Disease. J. L. B. Engelhard.—p. 41.
Intrauterine Melena (Melena Fetalis): Two Cases. I. S. Sindram.—p. 46.

Uterine Changes in Besnier-Boeck-Schaumann's Disease.—Engelhard observed 2 women with uterine involvement in Besnier-Boeck-Schaumann's disease (Boeck's sarcoid). The first patient was a woman aged 64 who had not menstruated for twelve years. She complained of a uterine discharge, but examination revealed a normal cervix and normal adnexa. Tissue obtained on curettage contained giant cells. A roentgenogram of the thorax disclosed an enlarged hilus lymph node. The hands and feet showed sarcoid lesions, and round areas of lesser density were observed in the legs. On the basis of the urinary changes, diabetic treatment was instituted and the urine became normal. The uterine discharge ceased and the genitalia were normal, but roentgenoscopy still disclosed the same changes. The second patient also had uterine and cervical changes characteristic of Boeck's sarcoid. The author says that, while the literature contains reports of tuberculosis of the cervix and uterine mucosa, he did not find any records of uterine involvement in Besnier-Boeck-Schaumann's disease.

Nordisk Medicin, Gothenburg

30:1233-1288 (June 7) 1946. **Partial Index**

Tuberculosis Infection and Morbidity Among Teachers in Norway. G. Hertzberg.—p. 1233.
New Hoop for Wire Traction Through Tuberosity of Tibia. V. von Bahr.—p. 1238.

Hospitalstidende

*Cholesterol Deposit in Organism, with Special Regard to Conditions in Atheromatosis. M. Faber.—p. 1239.
Investigations on Effect of Diiodothyrosin in Thyrotoxicosis. S. E. Budolfsen.—p. 1246.
Agranulocytosis After Sulfathiazole. H. P. Friis-Hansen.—p. 1248.

Norsk Magasin for Lægevidenskapen

Arteritis Temporalis. O. J. Broch and Ø. Ytrehus.—p. 1251.

Hygiea

Metachromatic Substance in Cornea, with Special Regard to Its Transparency. G. Aurell and H. Homgren.—p. 1277.
Transparency of Corneal Tissue. T. Caspersson and A. Engström.—p. 1279.

Cholesterol Deposition and Atheromatosis.—Cholesterol depositions are characterized by extracellular beginning. The most important are those in the aorta and other central vessels in atheromatosis. Two factors in the development of the deposits are (1) the influence of the amount of cholesterol supplied by the blood stream and (2) a tissue factor responsible for their localization. The tissue factor seems to dominate in arcus lipoides, in the concentration of the serum cholesterol and in xanthoma palpebrarum. In atheromatosis of the central vessels cholesterol has a decisive influence, particularly when hypercholesteremia is demonstrated. In hypercholesteremia an acceleration of cholesterol deposition takes place. Increased serum cholesterol predisposes to an earlier atheromatosis. An injury with following reparative processes promotes cholesterol deposition in the aorta. Hypertension seems to act through a tissue factor. Cholesterol in the aorta is found at the site of metachromatic substance. Metachromasis is present where cholesterol is normally found and also in pathologic cholesterol deposits in chronic salpingitis, cholesterol pleurisy and Schüller-Christian's disease. The three known metachromatic substances in the organism, chondroitin, mucoitin sulfuric acid and heparin, seem to be equally active. The mechanism in cholesterol deposition is still unknown.

Book Notices

The Psychoanalytic Theory of Neurosis. By Otto Fenichel, M.D. Cloth Price, $7.50. Pp. 703. W. W. Norton & Company, Inc., 70 Fifth Ave., New York 11, 1945.

This book represents the completion of a difficult task. In order to explain the psychoanalytic theory of neurosis, the author has found it necessary to detail the mechanics of the entire range of mental phenomena, from the growth and development of the normal personality to every phase of mental illness. The book is not intentionally descriptive and thus presupposes a familiarity on the part of the reader with psychiatric syndromes. The author's interest is confined to an elucidation of the mechanics underlying normal and abnormal behavior. In part I, on preliminary considerations, a short introduction regarding the general nature of freudian concepts leads to a long and extremely lucid statement on the development of the mental apparatus and the personality. The description of the extraordinarily complex mechanisms involved in this development is deftly handled. The author repeatedly stresses the obvious gaps and deficiencies in our present day knowledge, especially of psychologic-physiologic correlations. In spite of the difficulties resulting from ignorance of exact and measurable data, the theory of the development of psychologic mechanisms in the infant, child and adolescent compels recognition because of its usefulness in understanding the psychologic problems of adults.

In part II Fenichel undertakes the application of this theory of the development of the personality to the symptoms of clinical illness and of abnormal behavior. The core of neurosis is represented as the "neurotic conflict," the central task of the ego as the avoidance or solution of such a conflict. To demonstrate the origin of a neurotic conflict the author begins the exposition with the traumatic neuroses, in which the ego is overwhelmed by excitation due to external stimuli, and mastery or an adequate adaptive response to the situation is impossible. Psychoneurotic symptoms are conceived as secondary to the traumatic neuroses, resulting when the ego has failed to solve adequately its reaction to the original situation. Every psychoneurosis is thus the result of a "relative trauma." The individual symptoms of the psychoneurosis (or psychosis or psychopathy), although exceedingly complex and overdetermined, are in general the result of a regression of the ego, following its failure, to an earlier, more immature way of adapting to reality plus attempts to defend itself against or negate the consequences of such a regression. The conflict lies between the regressed part of the ego, committed to infantile modes of behavior, and the more mature ego responsive to culturally acceptable standards. The depth of the regression taken with the type of defense put up by the more mature and conscious part of the ego determines the type of neurosis which appears.

In filling in the details of this theory, Fenichel goes to exhaustive and almost superhuman lengths. Every clinically discernible type of psychiatric disorder is subjected to patient and scrupulous analysis in the light of regression, defense and neurotic conflict. For each clinical symptom a myriad of theoretically possible dynamic mechanisms is presented. The psychoanalytic and psychiatric literature is thoroughly combed lest some nuance of a dynamic interpretation escape mention, and the text is supplemented by a bibliography and index of gargantuan proportions. Although this method of proceeding by infinite and laborious detail makes the book superb as a source of psychoanalytic interpretations of symptoms, by the same token it loses considerable force as an exposition of psychoanalytic theory. The reader becomes entangled in the variety and subtleties of possible mechanisms and loses the main outlines of the theory. Furthermore, because what is described is always a symptom and its mechanism, the human characteristics of every neurotic problem are obscured by the somewhat mechanical approach.

Nevertheless the book rises above its defects. In spite of the considerable repetition and infinite detail, it remains a contribution of the greatest value to psychiatric literature. The encyclopedic task accomplished by Fenichel will prove rewarding both to the newcomer to psychoanalytic theory and to the practicing psychiatrist in search of source and reference material.

Diagnostic Psychological Testing: The Theory, Statistical Evaluation, and Diagnostic Application of a Battery of Tests. Volume II. By David Rapaport, Ph.D., with the collaboration of Merton Gill, M.D., and Roy Schafer, B.S. The Menninger Clinic Monograph Series No. 4. Cloth. Price $6.50. Pp. 516, with illustrations. Chicago: Year Book Publishers, Inc., 1946.

This volume by members of the research staff of the Menninger Foundation deals with the so-called projective tests; volume I presented the authors' work with nonprojective tests, the Bellevue scale, the Babcock test and the sorting test. The present work covers studies with the word association test, the Rohrschacher test and the thematic apperception test. These are diagnostic tests of personality and ideational content in contrast to tests of intelligence and achievement. The first chapter discusses the nature, applications and misapplications of the projective tests. The chapter on the word association test presents the psychologic rationale of the test, the method of administration and the results of analysis of the stimulus words. The diagnostic significance of disturbances in the associations in the groups of psychotic and neurotic persons to whom the test was given are discussed. As a result of their analyses the authors have undertaken to revise the stimulus-word list both as to content and as to sequence. Their list contains only noun stimulus-words and is revised to touch on significant relationships and conflict areas.

The bulk of the work (310 pages) is devoted to the Rohrschacher test. The authors emphasize the fundamental simplicity of the test despite its apparent complexity. In this study the aim was to validate the significance of the different responses, to standardize the diagnostic use of the responses and "to systematize a manner of analyzing the verbalization of Rohrschacher responses, a task which has been thus far neglected in the main, to the detriment of the test's diagnostic potency." Method of administration, scoring, rationale and careful analyses of the responses of the several clinically distinct groups of psychotic and neurotic persons are exhaustively presented and discussed. A summarizing section gives the individual diagnostic findings on examination of 217 persons in the several groups referred to. The observations on a "normal" control group are briefly summarized and contrasted with those evidencing abnormalities clinically.

The thematic apperception test is one in which the subject is required to make up a story around a picture presented visually. This test is included to offer "an appraisal of the subject's experiencing of his own world and of himself as part of it." Content and attitudes revealed in such a test are only incidentally revealed in the word association and Rohrschacher tests. The presentation of material on this test follows the general plan of discussion of the preceding tests, with emphasis on technics of interpretation and diagnostic indications. A final chapter briefly discusses the problem of diagnosing with a battery of tests. Here a few important rules for use of a battery of tests are laid down, together with discussion of differential diagnosis, weighting of the various tests as diagnostic tools, limitations and broader possibilities of their usefulness. Appendixes provide tabulations of the Rohrschacher score of each subject and an extremely useful review of the literature of the tests used in the study.

This book is written primarily for the specialist in clinical psychologic testing but is of greatest importance and interest to all psychologists and psychiatrists. It offers much to the student and research worker. The consistent effort to determine what it is that happens psychologically within the subject when confronted with the necessity to respond to the test, the meticulousness of the analyses of the individual tests and a clinical perspective doubtless enhanced by the particular setting in which the studies were made conspire to produce an impressive and important work. Doubtless the Rohrschacher in particular will find much to shoot at in further effort to establish fully the usefulness, meaning and application of this amazing test.

Les phénomènes d'allergie non spécifique dans la tuberculose et les fièvres typhoïdes: Importance de la notion des phénomènes de Sanarelli-Schwartzmann, les limites de la spécificité pathogène, contribution à l'étude de la pathogénie de la tuberculose et des fièvres typhoïdes. Par Jean Albert-Weil. Préface du Professeur René Leriche. Paper. Pp. 83. Libairie Maloine, 27, rue de l'Ecole-de-Médecine, Paris, 6e, 1946.

This small monograph gives the various conceptions of the author on nonspecific allergy in tuberculosis specifically and is based on general conceptions of other authors. The presentation is divided into three main parts. The first reviews the phenomena of allergy in tuberculosis and of nonspecific allergy, sensitization and the toxic and allergic feature of the histopathologic tuberculosis, including the involvement of the neurovegetative system. The conceptions of Besredka and Ghon are given consideration. The specificity of the terrain is considered, and its effect on the virulence of the bacilli noted. The phenomenon of nonspecific tuberculin is discussed, and the role of the neurovegetative system in the reaction of hypersensitiveness expounded. The action of the tubercle bacillus on the tuberculous terrain is viewed in the light of the development of the virulence of other germs (colon bacillus and others). The second part considers the nonspecific allergy in typhoid-like fevers and the part played by the typhoid bacilli and their lesions on the multiplication and virulence of colon bacilli. The influence of tissue necrobiosis on the multiplication and virulence of bacteria is noted, and its importance in the role of the pathogenesis of morbid allergic and toxic phenomena, tissue sensitization to intestinal saprophytes during the course of typhoid, sensitization and autosensitization toward colon bacilli and associated activation of virulence, group sensitization and the involvement of the Sanarelli-Schwartzmann phenomena in the course of typhoid and paratyphoid are discussed. The third part considers the limits of bacterial specificity and the mosaic character of bacterial antigens. A brief conclusion summarizes the author's views and the possible relations to therapy on this basis.

Since this monograph is one of general conceptions and a personal point of view with which many might readily dissent as to its practical significance, especially in tuberculosis, it can only be suggested that the monograph be read by those interested in nonspecific allergies and their possible significance, so inherently one of points of view, in an involved field such as allergy.

If You Ask My Advice: Frank Discussions of Family Problems. By Henry Pleasants Jr., M.D. Cloth. Price, $2. Pp. 110. Bruce Humphries, Inc., 30 Winchester St., Boston, 1946.

Eight subjects ranging from family problems to insurance are discussed rather superficially. Although the manner of presentation is easy-going, with liberal use of homely phrases and emphasis on informality, conclusions that are definitely helpful are seldom reached. For example, in the essay titled "This Thing Called Sex" the author drops the subject of child education back in the parental lap with the casual query "Would it not be better to explain the whole problem of sex to youngsters in such a way that they can understand the simple basic reason back of the annoying restrictions?" The author is to be commended for keeping the matter of medical treatment on a superficial plane, but one might find fault with conclusions such as are presented in the case of a woman in whom sanity was restored . . . or at least her mind made "clear as crystal" . . . by correction of faulty intestinal elimination.

Zur Physio-Pathologie der Niere. Von Dozent Dr. med. Otto Spühler, Oberarzt der Med. Universitats-Poliklinik Zurich. Mit einem Vorwort von Prof. Dr. med. P. H. Rossier. Cloth. Price, 17.50 Swiss francs. Pp. 248, with 22 illustrations Bern: Hans Huber, 1946

The author's intention is threefold. He presents, first, a text in German ably summarizing the technics and concepts of modern renal physiology. Second, he seeks, albeit only at the sacrifice of clarity, to coordinate these with the older views on renal function. Third, and even less fortunately, he interpolates illustrative data from his own observations of inulin, urea, uric acid and chloride clearances. The principal topics are glomerular filtration, renal blood flow, tubular activity and diuresis. The author apparently is not familiar enough with the pitfalls of renal function testing to appraise his data critically. It is especially difficult to reconcile the average urea clearance of only 37 cc. per minute which he finds in normal subjects with the concurrent average inulin clearance, technically the more difficult procedure, which is correctly found to be 120 cc. per minute. The brief discussions of toxemia of pregnancy and hypertension are sketchy and might better have been omitted. Due allowance should be made for the fact that American and English journals in which most of the relevant articles of recent years have appeared seem to have been unobtainable in Switzerland after 1941. The book will direct European attention to the great strides in the study of renal function made in this country. As such it represents a laudable relaxation of continental complacency. It is well printed, indexed and bound and contains few typographic errors.

Cancer of the Scrotum in Relation to Occupation. By S. A. Henry, M.A., M.D., F.R.C.P. Oxford Medical Publications The Substance of This Paper Was Contained in the Hunterian Lecture Delivered at the Royal College of Surgeons on 2nd February 1940, but Information Which Has Since Become Available Has Been Added. Paper. Pp. 112, with 33 illustrations. New York, London & Toronto: Oxford University Press, 1946.

This is a laudable attempt to elucidate the causation of epithelioma of the scrotum. Much information is included on the causes of skin cancer and on carcinogenic substances. Detailed studies of the incidence of scrotal cancer in various occupations and industries are correlated with the probable carcinogenic agent in each. The author has used as material for study all cases (3,333) of notifiable epitheliomatous ulceration of the skin since 1920, and all fatal cases of scrotal cancer (1,638) in England and Wales from 1911 to 1938. This tumor causes only 0.25 per cent of all cancer deaths but, because of its rarity, its incidence in certain occupations becomes all the more revealing. There are discussions on the agents encountered, the time necessary for the production of the primary growth (induction time), the period of delay between the last exposure and manifestation of the disease, and other points. There are brief chapters on prevention and treatment and a historical introduction which begins with the observations of Percival Pott on chimney sweeps' cancer of the scrotum—the first known recorded example of the cause of a cancer. Excellent photographs are included, but the bibliography refers mainly to British papers and there is no broad critical review of the subject. The volume contains a wealth of data which should be of interest to those concerned with the etiology of cancer, carcinogenic agents, industrial and occupational diseases, skin cancer, vital statistics and others. The style of writing is not always easy, but the value of the material far outweighs this defect. This study is an example of a method which might profitably be more widely used to reveal exogenous causes of human cancers.

Renal Hypertension. By Eduardo Braun-Menéndez, Juan Carlos Fasciolo, Luis F. Leloir, Juan M. Muñoz, and Alberto C. Taquini. Translated by Lewis Dexter, M.D. Fabrikoid. Price, $6.75. Pp. 451, with 91 illustrations. Charles C Thomas, 301-327 E. Lawrence Ave., Springfield, Ill. 1946.

The Argentine (1943) edition was reviewed in THE JOURNAL Dec. 2, 1944, page 926. This edition is offered as a summary in English of present day knowledge of renal hypertension. The translator has incorporated material from one hundred and twenty-four papers which appeared during 1944 and 1945. The translation is therefore not line for line, although traces of Iberian sentence structure persist. Most of the minor errors of the former edition have been amended. Format and typography are improvements on the original. The book is recommended as a compendium for investigators whose critical familiarity with the field enables them to form more objective concepts than are presented by the authors. The clinician will find the book useful chiefly as an excellent bibliographic file in renal hypertension.

A Handbook of Radiography. By John A. Ross, M.A., M.R.C.S., L.R.C.P., Radiologist, General Hospital, Warrington, England. Second edition. Cloth. Price, 10s. 6d. Pp. 165, with 92 illustrations. H. K. Lewis & Co., Ltd., 136 Gower St., London, W. C. 1, 1946.

This is a rather elementary and brief technical manual on roentgenography suitable for the instruction of x-ray technicians and for guidance for physicians so situated that they must utilize x-rays in diagnostic work without having the benefit of properly trained technical help. The illustrations consist of line drawings.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

DANGER OF DDT IN KITCHENS

To the Editor:—We have been using DDT for spraying the hosiptal's kitchens and dining rooms for the control of flies. The safety of this procedure has been questioned. Is there a possibility of harm to persons eating food prepared in the kitchens and served in the dining room?

B. Earl Clarke, M.D., Providence, R. I.

Answer.—It is not clear what method of spraying has been used by the inquirer. The degree of hazard is influenced to some extent by the method of application. Since DDT has been shown to be capable of producing chronic toxicity in animals when added to their diet even in small amounts, every effort should be made to keep this substance out of human food. It should not be allowed to contaminate food, cooking or eating utensils or table tops. Such contamination can generally be avoided by applying the spray directly to the ceiling and walls.

TREATMENT OF SPLENOMEGALY

To the Editor:—A patient with moderately advanced Banti's disease has a palpable spleen which extends to the umbilicus. The patient has been advised that nothing more can be done. Would epinephrine in oil or splenectomy be of any value at this stage?

W. J. Klinck, M.D., Lennoxville, Quebec.

Answer.—Epinephrine in oil might have a transient effect on the peripheral blood picture, but it would not have value in the treatment of Banti's disease. Most authors feel that splenectomy is beneficial when performed in the early stages of the disease before the liver function is seriously impaired. The mechanical effects of a large tumor are removed and less blood flows through the portal system, thus lessening the chance of bleeding. In many cases, however, the results of splenectomy are unsatisfactory and the course of the disease is unaltered.

THIOURACIL FOR HYPERTHYROIDISM IN PREGNANCY

To the Editor:—Are there any data concerning the use of thiouracil in hyperthyroidism complicating pregnancy? Are blood changes more apt to occur when the patient taking thiouracil is pregnant? Is there any known effect on the unborn infant?

R. K. Finley, M.D., Dayton, Ohio

Answer.—There are not enough data on the use of thiouracil in hyperthyroidism complicating pregnancy to warrant definite conclusions. The data available indicate that hyperthyroidism responds about the same to thiouracil in women who are pregnant as it does in women who are not pregnant. Leukopenia and agranulocytosis are not more common when the drug is given during pregnancy. There are not sufficient data to state whether or not the drug is harmful to the fetus. The evidence available indicates that it is not.

PRIAPISM IN LEUKEMIA

To the Editor:—Please discuss the treatment of priapism complicating chronic myeloid leukemia. Is thrombosis the cause? If so, would the use of Dicumarol (3,3'-methylene-bis-[4-hydroxycoumarin]) be justified in spite of the tendency to hemorrhage?

C. E. McCarthy, M.D., Clinton, Tenn.

Answer.—Priapism, a relatively uncommon symptom of leukemia, has been ascribed to thrombosis, leukocytic stasis or leukemic infiltration in the corpora cavernosa. Radiation treatment of the leukemia often relieves the local symptom. Should there be recurrences of priapism after the leukocyte count is reduced, a trial with Dicumarol is justified. Only in the late stages of chronic myeloid leukemia is there a lowering of the platelets with a tendency to hemorrhage. Dicumarol would be contraindicated in such cases.

COFFEE AND CORONARY DISEASE

To the Editor:—Is there any definite proof that coffee is contraindicated in coronary disease and Buerger's disease?

Axel W. Swenson, M.D., Van Nuys, Calif.

Answer.—No. Nor is there any proof that it is of benefit, although one might suppose that the vasodilatation produced by caffeine might be of slight value.

FALSE POSITIVE SEROLOGIC REACTIONS FOR SYPHILIS AFTER TROPICAL DISEASES

To the Editor:—Several soldiers who had tropical ulcers or jungle rot in the South Pacific have had positive Wassermann tests after their return, varying from 1 plus to 3 plus. Serologic tests were negative before they had the disease, and history of sexual contact or chancre is denied. After repeated tests the Wassermann test gradually becomes negative. Is there any literature or direct information on this subject? It is extremely embarrassing for these men to return to their wives and try to convince them that they have not had any outside family contacts.

M.D., Wisconsin.

Answer.—"Tropical ulcers" so called, or "jungle rot," are not in themselves known to produce positive blood serologic tests for syphilis. They may, of course, be complicated by syphilis. The term "tropical ulcer" as such is used for a specific clinical entity of uncertain and possibly varying etiology (Manual of Tropical Medicine, National Research Council, Philadelphia, W. B. Saunders Company, 1945, p. 475). It is also used in a more general sense to include several tropical diseases which may produce skin ulceration (e. g. leishmaniasis, oriental sore, kala azar or even granuloma inguinale). These are occasionally known to produce biologic false positive reactions for syphilis (Stokes, Beerman and Ingraham: Modern Clinical Syphilology, Philadelphia, W. B. Saunders Company, 1944, p. 87, fig. 33).

The first requisite, of course, when confronted with a patient with a positive blood serologic test is to rule out syphilis. If this cannot be done by the usual procedures, the patient should be treated for this disease.

On the other hand, the fact that the tests reported on the cases cited are only weakly positive and that they revert to negativity in a relatively short time indicates that they are probably nonspecific positives unrelated to syphilis. (For complete recent review of this subject see Herman Beerman: Biologic False Positive Reactions to Tests for Syphilis, *Am. J. M. Sc.* **209**:525 [April], 524 [Oct.] 1945.) Such cases in the absence of other evidence of syphilis should be observed over periods of as much as four to six months at two to four week intervals. The blood should preferably be studied by quantitative procedures in order to determine the exact amount in units of reagin present in order to detect significant trends. Treatment for syphilis should not be given on the basis of weakly positive serologic tests alone, in the absence of other evidence of the disease or a definite history of infection.

A number of causes other than syphilis for positive blood serologic tests among veterans recently returned from the South Pacific are known, among the most common being:

1. Inoculation to produce immunity against various infectious diseases. Soldiers who are working in the South Pacific area receive inoculations on an average of once every six months and at times, when exposed to epidemic conditions, more frequently. It is common practice also to have the medical records reviewed at the time of discharge and for the soldiers to be given a series of inoculations against infectious diseases at that time. The nonspecific positive reactions for syphilis when they occur in these circumstances are transitory, appearing within two weeks of the date of vaccination or inoculation and disappearing in most instances within two months or persisting occasionally as long as four months. The effects of these inoculations could accordingly be carried into the first few months of civilian life. Considerable interest in recent years has centered about nonspecific positive reactions for syphilis from immunization. Some of the more important references on this subject being:

Rien, C. R., and Elsberg, E. F.: Studies on the Incidence and Nature of False Positive Serologic Reactions for Syphilis, *Am. J. Clin. Path.* **14**:461 (Sept.) 1944.

Loveman, A. B.: False Positive Serologic Reactions for Syphilis: Report of 100 Cases Following Routine Immunizations and Upper Respiratory Infections, *Bull. U. S. Army M. Dept.*, **80**:95 (Sept.) 1944.

Favorite, G. O.: Facts Influencing False Positive Serologic Reactions for Syphilis Due to Smallpox Vaccination (Vaccinia), *Am. J. M. Sc.* **208**:216 (Aug.) 1944.

Kolmer, J. A.: The Problem of Falsely Doubtful and Positive Reactions in the Serology of Syphilis. *Am. J. Pub. Health* **34**:510 (May) 1944.

2. A previously active or not completely cured tropical disease, as for example malaria. This aspect of the problem has also been discussed extensively in several recent authoritative articles:

Robinson, H. M., Jr., and McKinney, W. W.: The Effect of Vivax Malaria on Spinal Fluid and Blood Serologic Tests for Syphilis, The Journal, Nov. 3, 1945, p. 667.

Rosenberg, A. A.: Effects of Malaria on Serologic Tests for Syphilis, *Bull. U. S. Army M. Dept.* **84**:74 (Jan.) 1945.

Elmes, B. G. T., and Findley, G. M.: Malaria and the Serologic Reactions for Syphilis in British Soldiers, *J. Roy Army M. Corps* **84**:29 (Jan.) 1945

Potter, H. W.; Bronstein, L. H., and Gruber, C. M.: Blood and Spinal Fluid Tests for Syphilis in Malaria Patients, The Journal, March 24, 1945, p. 127; in correspondence May 12, 1945 and in Queries and Minor Notes Feb. 16, 1946, p. 466.

USE OF METREURYNTER

To the Editor:—A primapara aged 28 was seen because of uterine bleeding. She gave a history of menorrhagia for a few weeks on and off and of previous operative intervention by a physician, the nature of which was unknown. Following this procedure there was intermittent uterine bleeding for a few weeks and progressive weakness. Vaginal examination under aseptic precautions revealed an enlarged and soft uterus, no palpable mass inside the uterus or elsewhere, and an open cervix with oozing of blood. The patient complained of tenderness over both lower quadrants and over the abdomen. A vaginal pack was inserted, and she was advised to stay in bed. On the next day, when the pack was removed, there was very little blood. Ergonovine was given, one tablet three times daily for two days. The patient did not return for seventeen days but stated that the bleeding continued during this period and that she did not stay in bed. Reexamination again showed an open cervix with bleeding. A vaginal pack was inserted daily for the next three days and ergonovine was repeated, one tablet every four hours. The patient refused to stay in bed, and the bleeding persisted. Because of the persistent bleeding a 1 inch Voorhees bag was inserted on the fourth day with an attached weight. In twenty-four hours the Voorhees bag came out with a few clots. Fifteen minutes later a mass the size of a small grapefruit was passed, along with what appeared to be membrane from the placenta. Following this the bleeding stopped. An Aschheim-Zondek test was not done in this case because of the uterine bleeding. Was an Aschheim-Zondek test necessary in this case? Is an Aschheim-Zondek test misleading at times, since other conditions besides pregnancy can give a positive test? Can the results of the Ascheim-Zondek test be misleading as a result of the way some patients collect their urine? Is there any reason why a metreurynter should not have been used in such a case of uterine bleeding with a history of previous surgical intervention of unknown type?

M.D., Connecticut.

Answer.—If the patient was only two or three months pregnant the simplest way of emptying the uterus probably would have been dilation of the cervix and curettement of the uterus, provided the cervix was soft. If the cervix was firm, either a small metreurynter such as was used or a cervical gauze pack would be proper therapy because both of these foreign bodies cause softening and dilatation of the cervix and subsequent expulsion of the products of conception. In this case it would have been advisable to perform a curettage after the spontaneous expulsion of the masses to make certain that no placental or membranous tissue remained in the uterus.

A positive Aschheim-Zondek test nearly always indicates a living conceptus, especially a living fetus. However, even in the presence of a dead baby the Aschheim-Zondek test may be positive if the placenta has living chorionic ectoderm. On the other hand, in early pregnancies there may be a negative biologic test in the presence of a living embryo. Occasionally, but not often, a positive Aschheim-Zondek test is obtained in the absence of a pregnancy.

Nearly all textbooks of obstetrics contain descriptions of the use of metreurynters aided by illustrations. Two of the best are De Lee and Greenhill's Principles and Practice of Obstetrics (ed. 8, Philadelphia, W. B. Saunders Company) and Stander's Textbook of Obstetrics (New York, D. Appleton-Century Company).

TREATMENT OF GIARDIA LAMBLIA INFECTION

To the Editor:—A girl aged 3 years developed diarrhea in August 1945. Examination of the stools revealed Giardia, mucous threads and blood. Bowel movements occur two to three times a day but the diarrhea becomes worse if a proper diet is not followed. There has not been fever or pain. The patient does all right under medication with bowel antiseptics. What is the latest treatment of flagellate dysentery (giardiasis)?

M.D., Missouri.

Answer.—The most effective treatment for Giardia lamblia infection thus far reported is the use of quinacrine hydrochloride (atabrine dihydrochloride). Therapy for an adult consists in the oral administration of one tablet, 0.1 Gm. (1½ grains), of quinacrine three times daily for five days. The dosage for a 3 year old child should be reduced accordingly. No untoward reactions to the drug have been observed, although the number of stools may be increased during the first several days of medication. The infection usually is controlled rapidly and Giardia may disappear from the stools after only one or two days of therapy. A second course of quinacrine may be necessary after an interval of seven to ten days. Less frequently Giardia lamblia infection may persist after several courses of therapy with quinacrine.

Giardia lamblia organisms are not known to invade tissue. They do not produce bloody stools, although diarrhea is not an uncommon symptom. In the present case, therefore, it seems highly improbable that they are responsible for the bloody stools.

References:

Nutter, P. B.; Rodaniche, Enid C., and Palmer, W. L.: Giardia Lamblia Infection in Man, *The Journal*, April 12, 1941, p. 1631.

Hartman, H. R., and Kyser, F. A.: Giardiasis and Its Treatment, *ibid.*, June 28, 1941, p. 2835.

Culbertson, J. T.: Specific Chemotherapy of Giardia Infections, *J. Lab. & Clin. Med.* **26:** 1465 (June) 1941.

Welch, P. B.: Giardiasis with Unusual Clinical Findings, *Am. J. Digest. Dis.* **10:** 52 (Feb.) 1943.

RECURRENT DISLOCATION OF THE MANDIBLE

To the Editor:—A patient has had thirty or forty dislocations of the mandible in the past year and a half following a difficult tooth extraction. The dentist had to force the mouth open vigorously. The jaw went out of place and apparently the capsule was so stretched that the dislocation has been recurring. Recently general anesthesia has been necessary for reduction because of severe pain. Has the method of injecting a sclerosing solution into the capsular ligaments to produce contraction been successful? What type of solution has been most successful and what is the technic?

A. A. Skemp, M.D., La Crosse, Wis.

Answer.—In recurrent dislocation (or subluxation) of the mandible, simple treatment should be instituted early. After the second dislocation of the mandible interdental wiring (or elastics), a chin strap or other device to limit the opening of the mouth should be applied for several months. If this procedure proves to be inadequate, as it frequently does, the temporomandibular joint should be injected with a sclerosing solution. The results have been encouraging. The technic briefly is as follows: With the mouth open, a 1½ inch long 26 gage needle, on a 1 cc. tuberculin syringe is inserted into the temporomandibular joint posterior to the head of the condyle in a slightly upward and inward direction until contact is made with the mesial wall of the glenoid fossa. The penetration of the needle will be 2 to 3 cm. The needle is withdrawn about 0.5 cm., and 0.25 to 0.5 cc. of a 5 per cent aqueous solution of sodium psylliate mixed with an equal portion of 2 per cent procaine hydrochloride is injected. Sometimes several injections about ten days apart are necessary. The following references discuss the injection and surgical treatment of this disorder:

Schultz, L. W., and Shriner, Walter: Treatment of Acute and Chronic Traumatic Temporomandibular Arthritis, *J. Florida M. A.* **30:** 189 (Nov.) 1943.

Burman, Michael, and Sinberg, S. E.: Condylar Movement in the Study of Internal Derangement of the Temporomandibular Joint, *J. Bone & Joint Surg.* **28:** 351 (April) 1946.

ROENTGEN THERAPY OF RHEUMATOID SPONDYLITIS

To the Editor:—Recently I have been informed that there has been success in the high voltage x-ray irradiation of the Pierre Marie Strümpell type of arthritis. How much benefit is derived from treatment of this kind?

M.D., Quebec.

Answer.—Roentgen therapy has been employed in the treatment of different forms of rheumatic disease; the best results have been observed in cases of rheumatoid arthritis of the spine (Marie-Strümpell spondylitis). The technic usually employed is conventional high voltage x-ray therapy with factors 140 to 200 kilovolts, 50 cm. skin-target distance and 0.5 mm. copper and 1 mm. aluminum skin filters, and treatment is given to as many ports as needed to include the spine and paraspinous tissue involved in the disease, approximately 150 roentgens administered to each port on alternate days until 450 roentgens have been delivered to each port. It is best to treat only two or three ports on the same day. It is often necessary to repeat such treatment two or three times at intervals of four to six weeks. Scott has reported excellent results from the use of low voltage, wide field "superficial" roentgen therapy for this disease. Caution must be exercised in irradiating over the pelvis in young women in order that damage to the gonads may not occur.

The mechanism by which benefit is derived from roentgen therapy in this disease has not been explained, but several investigators have reported good results and most physicians who have properly employed it believe x-ray therapy superior to other measures to relieve the pain and muscle spasm of rheumatoid spondylitis. To determine whether the course of the disease is favorably altered, more prolonged observation of treated patients will be required. Best results are obtained in the earlier stages of the disease; x-ray therapy is of little value in the later stages when pain and muscle spasm are of minor importance, when the facets are ankylosed and the spinous ligament calcified.

Roentgen therapy is not complete treatment for rhizomelic spondylitis. Other valuable measures of treatment are required for best results.

Smith, Boland and Hench recently reported good results from roentgen therapy for rheumatoid spondylitis observed in a rigidly controlled study of different forms of treatment of early cases among military personnel. A discussion of the value and limitations of this form of therapy is contained in a recent report by Freyberg.

References:

Scott, S. G.: Wide Field X-Ray Treatment, London, George Newness, Ltd., 1939.

Smith, R. T.; Boland, E. W., and Hench, P. S.: The Effect of Roentgen Therapy in Rheumatoid Spondylitis, read before the American Rheumatism Association, New York City, May 25, 1946.

Freyberg, R. H.: Roentgen Therapy for Rheumatic Disease, *M. Clin. North America*, May 1946, pp. 603-615.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 133, No. 2
Chicago, Illinois
January 11, 1947

Copyright, 1947, by American Medical Association

THE VAGINAL SMEAR

Practical Applications in the Diagnosis of Cancer of the Uterus

JOE V. MEIGS, M.D.
Boston

In 1928 Papanicolaou[1] demonstrated his ability to make a diagnosis of cancer of the uterus by the observation of single malignant cells cast off from the tumor into the vaginal secretion. This was a cytologic diagnosis rather than a diagnosis made by a study of the architecture of the tissue, such as is done by pathologists. Subsequently, in 1941 and 1943, Papanicolaou and Traut[2] published articles and a monograph describing their experiences. The monograph, illustrated by many plates of benign and malignant cells, suggested to the medical profession that their method was a success and should be used. In 1943 Meigs and others,[3] confirming the work of Papanicolaou, reported a series of cases studied at the Massachusetts General Hospital and in 1945, in a second article,[4] gave convincing evidence of the value of the method. At present 2,749 cases with an error of only 3.2 per cent have been studied.

It is obvious to those who are interested in uterine cancer that this method is of extreme value in enabling the physician, if not to make a definite diagnosis, at least to screen satisfactorily women who come for routine examination. A positive smear indicates that careful further studies both by smear and by biopsy are indicated. A negative smear indicates that at the time it was taken cancer cells were not found on the slide. If the patient's symptoms or the appearance of the cervix is suggestive, more smears must be taken because there is convincing evidence that in certain instances shedding of the cells does not occur. Six and one-tenth per cent of 339 cancers did not show malignant cells. The positive smear is an indication that further investigation must be carried out until proof of cancer is found. Without other corroborative evidence I have rarely allowed a positive vaginal smear to be the sole reason for radical surgery The smear diagnosis is important and its value has been definitely settled, but how far one is to go in the treatment of patients with a positive smear and a negative biopsy has not yet been decided.

It has been suggested that smears be taken directly from the cervix and by use of a cannula from the endocervix and endometrial cavity. This is a splendid idea and without question it is of greater value in some instances than the vaginal smear, but this method loses the importance of the simplicity of the vaginal smear technic. The real value of the vaginal smear is the ease with which it can be made by general practitioners in their offices. Those who can easily carry out the more complicated method, should do it in addition to making the vaginal smear. The vaginal secretion, although it is more dilute than that removed directly from either the cervix or the endometrial cavity, gives one a greater chance to find cast-off cancer cells because all cells, not merely the cells aspirated from a small area of cervix and endometrium are shed into the vaginal secretion. There is no objection to cervical or endometrial smears, but on the whole for the purposes here mentioned greater concentration on the vaginal smear method will produce better results. The vaginal smear is taken by means of a small glass tube and a rubber bulb. The tube is placed in the vagina with the bulb compressed, the bulb is then released and the vaginal secretion removed by suction. The secretion is then blown on a glass slide, spread out with the tip of the glass tube to make a good film and then placed immediately in a solution of one part ether and one part 95 per cent alcohol. Smears may remain in the fixation two to three weeks without showing any signs of deterioration. It is important that the slide be placed in the fluid immediately after the secretion has been placed on the slide so that the maximum benefit of fixation may be secured. This is a simple method, and if it is complicated by the necessity of the use of speculums and cannulas it will defeat its own purpose, which is simplicity and accuracy.

In this paper it is not necessary to give the directions for staining methods or the method of diagnosis of individual cells. This has been included in numerous articles and in Papanicolaou and Traut's monograph, which can be easily obtained. However, there are a few characteristics of the cells which are extremely important. The nucleus of the cell is the main diagnostic criterion. The cancer cell has a large abnormal nucleus, and in groups a variation in size and shape is obvious. The large nuclei of cells from cervical cancer are radically different from those of the normal cells of the cervical epithelium. It is important to note the paucity of cytoplasm compared to the amount seen in the normal cell. In the cancer cell the large nucleus takes up most of the cytoplasmic space and the ratio of nucleus to cytoplasm is different from that in the normal cell In cancer of the endometrium the same criteria

---

From the Vincent Memorial Hospital (the gynecological service of the Massachusetts General Hospital Research Laboratory).

Read before the Section on Obstetrics and Gynecology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946

[1] Papanicolaou, G. N. New Cancer Diagnosis, Proc. Third Race Betterment Conf, Jan 2 6, 1928, pp. 528 534

[2] Papanicolaou, G N, and Traut, H. F.: Diagnostic Value of Vaginal Smears in Carcinoma of Uterus, Am J. Obst & Gynec **42**: 193-206 (Aug) 1941, Demonstration of Malignant Cells in Vaginal Smears and Its Relation to Diagnosis of Carcinoma of Uterus, New York State J Med **43**: 767-768 (April 15) 1943, Diagnosis of Uterine Cancer by Vaginal Smear, New York, The Commonwealth Fund, 1943

[3] Meigs, J. V, and others Value of Vaginal Smear in Diagnosis of Uterine Cancer, Surg, Gynec & Obst **77**: 449 461 (Nov) 1943

[4] Meigs, J V, and others: Value of Vaginal Smear in Diagnosis of Uterine Cancer Report of 1,015 Cases, Surg, Gynec & Obst **81**: 337 345 (Oct) 1945

secretion. The result of a vaginal smear was reported as doubtful. The bleeding and discharge persisted under treatment. However, two subsequent vaginal smears were positive. A dilation and curettage were performed and showed adenocarcinoma of the endometrium.

These 2 cases of uterine cancer, 1 cervical and 1 endometrial, emphasize the importance of the vaginal smear in the detection of early cancer. Neither of the cases was suggestive enough clinically to warrant biopsy, and both would have been missed except for the routine vaginal smear.

There is a special group of cases in which the vaginal smear method is of real practical value. These are cases of carcinoma treated in the past by radiation, in which the patients are watched routinely in the tumor clinic for possible recurrence of their disease. The importance of the vaginal smear method in this instance is illustrated by the 2 following case reports.

N. O., a woman aged 51, was given routine roentgen ray and radium therapy for an epidermoid carcinoma of the cervix, grade 2, stage 2, in 1941. On routine follow-up in the tumor clinic she had repeatedly positive smears over a period of six months in 1944. During this time she had no symptoms and was considered negative on clinical examination. One biopsy during this interval was reported as revealing "chronic inflammation." Six months after the first positive vaginal smear, tissue obtained from the vaginal vault with great difficulty, under anesthesia, showed epidermoid carcinoma of the cervix.

M. M., a woman aged 77, was given routine roentgen ray and radium therapy in 1944 for an epidermoid carcinoma of the cervix, grade 3, stage 3. On routine follow-up in the tumor clinic she had repeatedly positive smears over a period of eleven months. Evidence of disease could not be seen clinically and a suggestive area could not be detected for biopsy. The patient was asymptomatic. Eleven months after the first positive vaginal smear, a specimen for biopsy secured from the apex of the vagina showed epidermoid carcinoma of the cervix.

This type of case points out the importance of the vaginal smear in the routine examination of the Gynecological Tumor Clinic. In both these cases it was impossible to tell clinically whether disease was present. It is difficult to obtain specimens for biopsy from irradiated patients, and some screening method by which certain cases can be chosen for further study is of great value. It should be pointed out that the diagnosis by vaginal smear in this group of irradiated patients is more difficult than that of untreated patients. However, with careful study few false positive or negative smears will be reported in this group.

The next 2 cases are representative of a real problem. These are 2 patients who had clinically suspicious cervices and vaginal smears positive for cancer cells but in whom biopsies were negative. The question of whether radical surgical intervention should be performed in such instances is still unanswered.

M. S., a 35 year old woman who had four children, came to a private physician's office with the chief complaint of intermenstrual spotting of five to six weeks' duration. Pelvic examination revealed a lacerated cervix. Three vaginal smears were reported positive. Two specimens for biopsies taken at the same time as vaginal smears were made were reported as indicative of acute and chronic endocervicitis. A radical hysterectomy was performed. The final pathologic diagnosis was carcinoma in situ of the cervix.

L. S., a 45 year old woman who had two children, came to a private physician's office for routine physical examination. At pelvic examination, the cervix presented a normal appearance. The patient had had a supravaginal hysterectomy some years previously. A routine vaginal smear was positive for cancer cells. Biopsy showed only chronic cervicitis. A cervicectomy was performed. The final pathologic diagnosis was carcinoma in situ.

It is important to note that there is a certain group of early cases in which the diagnosis by vaginal smear is more accurate than that by biopsy. If the cervix presents a generally suspicious appearance it is difficult to know what portion to use for biopsy. For this reason even repeated biopsies may not disclose abnormalities. The problem of treatment in this type of case is especially important; if cancer is present, it is in an early stage and is curable.

The last report is that of an unusual case in which the vaginal smear was the only method of making a diagnosis.

R. W., a woman aged 80 who had had nine children, came to a private physician because of symptoms referrable to a leukoplakia of the mouth. She was given estrogen therapy, and three days later vaginal bleeding developed. A routine vaginal smear was positive. Since a Le Fort operation for prolapse had been performed fourteen years previously, she could not be properly examined pelvically. At operation the Le Fort colpoplasty was taken down, the cervix was visualized and a specimen for biopsy was taken. The biopsy was reported as epidermoid carcinoma, grade 4.,

This case has been presented merely as an example of the aid which the vaginal smear may render in diagnosis when pelvic examination is impossible.

CONCLUSIONS

1. The diagnosis of cancer of the cervix and of cancer of the endometrium can be made with a high percentage of accuracy by the vaginal smear method, as first suggested by Papanicolaou.
2. The diagnosis in patients with cancer of the uterus can be missed by this method if the tumor does not shed tumor cells.
3. The method should be of tremendous value in the routine screening of patients either in the clinic or in the hospital.
4. Early cases of cancer, i. e. "cancer in situ," can be diagnosed by this method.
5. A positive vaginal smear should not be regarded as an indication for hysterectomy. It should indicate that specimens for biopsy should be taken so that the pathologist may confirm the observations disclosed by the vaginal smear.
6. This method is not an office procedure; it should be interpreted by those trained in cytology and in the smear method of making a diagnosis.

ABSTRACT OF DISCUSSION

DR. WARREN C. HUNTER, Portland, Ore.: The author mentioned the reluctance of pathologists to examine material other than in form for biopsy, stating that they have been trained to depend on pattern in evaluating the malignant state of tissue. Naturally, one does prefer continuity and pattern, but there is no reason for a refusal to try other methods of diagnosis merely because of preference. For a long time, pathologists have been asked to look for cancer cells in transudates and have found them on occasion. Actually, there is nothing mysterious about the cytologic method. Any cell reaching the surface, whether normal or abnormal, is cast off and may retain its form long enough to be stained and identified. Even in tissue sections one pays attention to individual cell structure in addition to tissue pattern, degree of differentiation, polarity of cells and heterotopia as evidences of neoplasia. The cytologic features of tissue sections are equally applicable to single cancer cells and to groups of such cells. My experience with the method began about eighteen months ago. One soon becomes able to spot cancer cells in surveying smears under low power magnification by such important features as nuclear hyperchromatism and reduced nuclear cytoplasmic ratio, just as easily as one makes are true but there is less variation in the size and shape of the nucleus and less evidence of a differing in size from the normal nucleus. Yet the difference is real and can be observed. The presence of histiocytes and many leukocytes is a suspicious observation but is not diagnostic. The presence of blood is important, but its absence does not indicate a negative diagnosis. The most important observation is the abnormal nucleus *and its size in relation* to that of the rest of the cell. Diagnosis by means of the vaginal smear is a cytologic one, and any one with a good background in histology and cytology can be trained to be a satisfactory technician. It is difficult for the pathologist to be interested in this method, for he is trained to observe the relation of cells to architecture and the importance of invasion. Diagnosis by vaginal smear is painstaking and slow, and twenty minutes is not too long for the examination of a slide. Cases have been missed in the laboratory; yet after a review of the slide one or two cells were found that had been missed because the cytologist had not covered the entire slide the first time. Well trained technicians should be used to screen out negative slides, but in the process of screening suspicious cells should be noted, marked and presented to the expert for final decisions.

Cancer of the Cervix.—It is easier to diagnose cancer of the cervix than cancer of the endometrium. It is obvious that the individual cancer cells are cancer cells, and even though the tumor cannot be found at biopsy, nevertheless it must be there. There is such a definiteness about a positive cervical cancer cell that even if tumor is not found on multiple sections it would take complete serial sections to prove it was not present. It is quite possible, for it is known that one can make the diagnosis of "cancer in situ," that there is a time when the cancer is not over a few cells in size and it would be impossible for the pathologist to find it unless all the endocervix and squamous portion were observed under the microscope. This is as a rule impossible because of inability to spend the time and the money for serial sections. It is sad to think that it cannot be proved that positive cells mean cancer. If one could prove that a positive cell seen in a vaginal smear means cancer, even though infinitesimal, what a great advance would have been made! Nineteen slides have been called positive, but the pathologist has not been able to find the cancer. The cells were definite; yet they had to be called mistakes because the department of pathology has been unable to find the tumor. This is not the fault of the pathologist, for they have been extremely cooperative and have cut hundreds of sections, some of them serially; nevertheless it is essential in such a case that every single bit of cervical epithelium be viewed because it is felt that the cancer must be there. The number of errors for false positive smears is now at 2.0 per cent. That this is not a true picture is a definite fact in the opinion of those in the laboratory, but there is little one can do about it at this time. In the future it will be necessary to be much more exhaustive in the histologic study of the cervical epithelium.

In a certain group of patients a slide has been called negative when there was tumor in the cervix. This is explained by the fact that the tumor presumably did not shed cells. Perhaps the patient had just had a douche. It is impossible to make a diagnosis if the cells are not present, just as it is impossible for the pathologist to find tumor in a piece of tissue that has been removed from a noncancerous area. The pathologist does not call it a mistake when he says "no tumor present," even when it is obvious clinically that a tumor exists, for when he does the biopsy or cuts the block of tissue cancerous material may not be on his slide. Thus it is possible for the cytologist to miss cancer when it is present in the patient. In 3.5 per cent of the cases of cervical cancer in which the slides were called negative, re-observation still did not show signs of tumor cells on the slides. The diagnosis cannot be made if there is no shedding of cells, if there are no cells on the slides or if not even a small number of cells are seen in the study of the slide. This is a definite hazard of the smear method, but histologic examination of tissue presents the same problem.

Cancer of the Endometrium.—In the diagnosis of cancer of the endometrium the same problems are encountered, but there is an occasional confusion in calling cells malignant that are definitely not cancerous, and vice versa. It is because there is not a great deal of difference between normal and malignant endometrial cells. The diagnosis of endometrial cancer calls for more expert observation than does that of cancer of the cervix. It can be made and the figures are improving but the problem is difficult. The error of false negative observations in endometrial cancer is 20 per cent. Of 80 cases of proved endometrial cancer, 16 negative smears were reported and 12 of these did not show malignant cells on reexamination. These mistakes are subject to the same criticism as are the false negative group in cancer of the cervix, though the percentage is much higher. This may be explained partially by degeneration of the malignant cells from endometrial cancers before they are shed in the vaginal secretion. The more familiar the cytologist becomes with the diagnostic criteria the more accurate he becomes in his diagnostic acumen.

There can be no doubt of the value of the vaginal smear in the diagnosis of cancer of the cervix and of the endometrium. It should be an accepted fact everywhere that the diagnosis can be made this way. There are many advances to be made by this method of cancer research, the most important of which is its aid in making an early diagnosis and thereby permitting earlier and more satisfactory methods of treatment. The practical aspects of the problem will be presented in a few case reports demonstrating the value of the vaginal smear in the diagnosis of cancer in the early stages and in others when the diagnosis was made by smear in totally unsuspected cases.

In the series of 2,749 cases are included 339 cases of cancer. In 25 of these cases either carcinoma was unsuspected before a vaginal smear was taken or the vaginal smear was of great aid in the primary diagnosis.

REPORT OF CASES

Reports of 2 totally unsuspected cases of cancer follow:

E. W., a 30 year old woman who had two children, came to the outpatient department with the chief complaint of pain in the right lower quadrant of the abdomen. A pelvic examination was entirely negative. A routine vaginal smear was reported as positive. A biopsy was made two weeks later and was reported indicative of chronic cervicitis. A subsequent biopsy four days later showed epidermoid carcinoma of the cervix, grade 2. A radical hysterectomy was performed.

C. H., a woman aged 68, came to a private physician's office with the chief complaint of slight vaginal bleeding and discharge. Clinically nothing abnormal was seen except senile vaginitis, and many Trichomonas vaginalis were found in the vaginal secretion. The result of a vaginal smear was reported as doubtful. The bleeding and discharge persisted under treatment. However, two subsequent vaginal smears were positive. A dilation and curettage were performed and showed adenocarcinoma of the endometrium.

These 2 cases of uterine cancer, 1 cervical and 1 endometrial, emphasize the importance of the vaginal smear in the detection of early cancer. Neither of the cases was suggestive enough clinically to warrant biopsy, and both would have been missed except for the routine vaginal smear.

There is a special group of cases in which the vaginal smear method is of real practical value. These are cases of carcinoma treated in the past by radiation, in which the patients are watched routinely in the tumor clinic for possible recurrence of their disease. The importance of the vaginal smear method in this instance is illustrated by the 2 following case reports.

N. O., a woman aged 51, was given routine roentgen ray and radium therapy for an epidermoid carcinoma of the cervix, grade 2, stage 2, in 1941. On routine follow-up in the tumor clinic she had repeatedly positive smears over a period of six months in 1944. During this time she had no symptoms and was considered negative on clinical examination. One biopsy during this interval was reported as revealing "chronic inflammation." Six months after the first positive vaginal smear, tissue obtained from the vaginal vault with great difficulty, under anesthesia, showed epidermoid carcinoma of the cervix.

M. M., a woman aged 77, was given routine roentgen ray and radium therapy in 1944 for an epidermoid carcinoma of the cervix, grade 3, stage 3. On routine follow-up in the tumor clinic she had repeatedly positive smears over a period of eleven months. Evidence of disease could not be seen clinically and a suggestive area could not be detected for biopsy. The patient was asymptomatic. Eleven months after the first positive vaginal smear, a specimen for biopsy secured from the apex of the vagina showed epidermoid carcinoma of the cervix.

This type of case points out the importance of the vaginal smear in the routine examination of the Gynecological Tumor Clinic. In both these cases it was impossible to tell clinically whether disease was present. It is difficult to obtain specimens for biopsy from irradiated patients, and some screening method by which certain cases can be chosen for further study is of great value. It should be pointed out that the diagnosis by vaginal smear in this group of irradiated patients is more difficult than that of untreated patients. However, with careful study few false positive or negative smears will be reported in this group.

The next 2 cases are representative of a real problem. These are 2 patients who had clinically suspicious cervices and vaginal smears positive for cancer cells but in whom biopsies were negative. The question of whether radical surgical intervention should be performed in such instances is still unanswered.

M. S., a 35 year old woman who had four children, came to a private physician's office with the chief complaint of intermenstrual spotting of five to six weeks' duration. Pelvic examination revealed a lacerated cervix. Three vaginal smears were reported positive. Two specimens for biopsies taken at the same time as vaginal smears were made were reported as indicative of acute and chronic endocervicitis. A radical hysterectomy was performed. The final pathologic diagnosis was carcinoma in situ of the cervix.

L. S., a 45 year old woman who had two children, came to a private physician's office for routine physical examination. At pelvic examination, the cervix presented a normal appearance. The patient had had a supravaginal hysterectomy some years previously. A routine vaginal smear was positive for cancer cells. Biopsy showed only chronic cervicitis. A cervicectomy was performed. The final pathologic diagnosis was carcinoma in situ.

It is important to note that there is a certain group of early cases in which the diagnosis by vaginal smear is more accurate than that by biopsy. If the cervix presents a generally suspicious appearance it is difficult to know what portion to use for biopsy. For this reason even repeated biopsies may not disclose abnormalities. The problem of treatment in this type of case is especially important; if cancer is present, it is in an early stage and is curable.

The last report is that of an unusual case in which the vaginal smear was the only method of making a diagnosis.

R. W., a woman aged 80 who had had nine children, came to a private physician because of symptoms referrable to a leukoplakia of the mouth. She was given estrogen therapy, and three days later vaginal bleeding developed. A routine vaginal smear was positive. Since a Le Fort operation for prolapse had been performed fourteen years previously, she could not be properly examined pelvically. At operation the Le Fort colpoplasty was taken down, the cervix was visualized and a specimen for biopsy was taken. The biopsy was reported as epidermoid carcinoma, grade 4.,

This case has been presented merely as an example of the aid which the vaginal smear may render in diagnosis when pelvic examination is impossible.

CONCLUSIONS

1. The diagnosis of cancer of the cervix and of cancer of the endometrium can be made with a high percentage of accuracy by the vaginal smear method, as first suggested by Papanicolaou.
2. The diagnosis in patients with cancer of the uterus can be missed by this method if the tumor does not shed tumor cells.
3. The method should be of tremendous value in the routine screening of patients either in the clinic or in the hospital.
4. Early cases of cancer, i. e. "cancer in situ," can be diagnosed by this method.
5. A positive vaginal smear should not be regarded as an indication for hysterectomy. It should indicate that specimens for biopsy should be taken so that the pathologist may confirm the observations disclosed by the vaginal smear.
6. This method is not an office procedure; it should be interpreted by those trained in cytology and in the smear method of making a diagnosis.

ABSTRACT OF DISCUSSION

DR. WARREN C. HUNTER, Portland, Ore.: The author mentioned the reluctance of pathologists to examine material other than in form for biopsy, stating that they have been trained to depend on pattern in evaluating the malignant state of tissue. Naturally, one does prefer continuity and pattern, but there is no reason for a refusal to try other methods of diagnosis merely because of preference. For a long time, pathologists have been asked to look for cancer cells in transudates and have found them on occasion. Actually, there is nothing mysterious about the cytologic method. Any cell reaching the surface, whether normal or abnormal, is cast off and may retain its form long enough to be stained and identified. Even in tissue sections one pays attention to individual cell structure in addition to tissue pattern, degree of differentiation, polarity of cells and heterotopia as evidences of neoplasia. The cytologic features of tissue sections are equally applicable to single cancer cells and to groups of such cells. My experience with the method began about eighteen months ago. One soon becomes able to spot cancer cells in surveying smears under low power magnification by such important features as nuclear hyperchromatism and reduced nuclear cytoplasmic ratio, just as easily as one makes out immature blood cells in a blood film. Other important features, such as the lack of individual cell boundaries, are likewise readily appreciated under low power magnification. Familiarity with individual cancer cells opens a new vista of cellular pathology in tissue sections, in that one sees finer details than one ever thought existed when studying cells en masse. As the author brought out, there are drawbacks to the method. At present there are too few physicians and too few technicians to carry the load. Some smears can be examined in a few minutes. The questionable ones may take thirty or even forty-five minutes. Then, too, postradiation changes are on occasion rather troublesome. I have not yet tried the modification of Ayre, mentioned by Dr. Traut. The original method has been modified somewhat in that a tube is not used but the material is taken on the speculum and then the smears are made, the remainder being placed in alcohol-ether, embedded in paraffin, sectioned and stained by the Papanicolaou method so that both smears and sections are available.

Dr. Joe Vincent Meigs, Boston: I enjoyed Dr. Rubin's paper. He has done something that is of extreme value. I cannot but believe, as I see patients in my office and know that some of them have menstruated from the age of 14 until they are 24 or 26 before they tried to have children, that to add contraception to that insult to nature is wrong. I think that lack of child bearing accounts for a number of cases of endometriosis. The comparison of private patients who have their first babies at the age of 26 or 27 and the patients seen in charity wards who have their babies when they are 18 and 19 is very striking. A great deal of attention should be paid to what Dr. Rubin says. Physicians ought to advise girls who are just married to have children and not try to teach them how not to.

MEASURES FOR THE PROTECTION OF NEWBORN INFANTS

I. Description of Measures Instituted in May 1937 at Long Island College Hospital

CHARLES A. WEYMULLER, M.D.
ALFRED C. BECK, M.D.
and
ELIZABETH J. ITTNER, M.D.
Brooklyn

Because the newborn infant is particularly susceptible to certain types of infection, special precautions must be taken for his protection as well as for that of his companions in the nursery. All have become familiar with the fact that epidemics can and do occur in nurseries for newborn infants, even in elaborately equipped hospitals of the highest professional standing. Most publicized among the conditions that cause such epidemics is the dreaded diarrhea of the newborn. This disease sometimes carries a mortality rate as high as 80 per cent and taxes to the utmost the resources of the most expert pediatricians. Because exhaustive researches have not disclosed its cause or the means of its transmission, its control is exceedingly difficult even under ideal conditions. The only effective weapon in combating this scourge of modern nurseries is a meticulous technic of isolation rigidly applied to infants who have been afflicted with the disease or who have been exposed to it.

Far more important, though usually less dramatic, are infections of the skin, of the respiratory tract, of the eyelids and even of the eyes. Because of the prophylaxis, only 1 case of gonorrheal ophthalmia has occurred among the newborn infants of the Long Island College Hospital during the past twenty years, although many of their mothers had gonorrhea. On the contrary, cutaneous and respiratory infections have not been rare; they tend to spread rapidly from patient to patient and may become generalized and result in general sepsis. Although chemotherapy and antibiotic and serum therapy have revolutionized the control of certain varieties of generalized infections, certain other types resist all forms of treatment and end fatally. As a consequence, there is a wholesome horror of these conditions.

As to respiratory infections, no specific prophylactic measures have been adopted, pending the results of studies in progress elsewhere on the use of aerosols and ultraviolet radiation.

However, our routine for the prevention of infection of the skin has been most effective, and will be discussed later in this paper.

This paper, then, will first discuss the factors in spreading infection, and will follow with the corrective measures suggested.

FACTORS IN SPREADING INFECTION

The circumstances that favor the development of the common types of nursery infections are:

1. Unnecessary contact with visitors, nurses and physicians
2. Inadequate isolation of the infants from one another in the nursery
3. Faulty technic for preventing the spread of contamination through (*a*) unsatisfactory nursing assignments, (*b*) common bathing and common weighing facilities, (*c*) inadequate facilities for sterilization of bottles, milk mixtures and other materials used in the care of infants, (*d*) the common utility room and (*e*) the proximity of uncontaminated units to isolation units.

1. Unnecessary contacts, especally with visitors, are an important source of infection. In practically every community in this country the causative agents of the diseases may be introduced into the maternity and nursery units by the mother or her visitors at almost any time. Unfortunately, visitors are a menace of the first magnitude from the point of view of persons attempting to control infection. Yet in some hospitals no restriction is placed on the number of visiting hours or on the number of visitors. It is not unusual for visitors to come to the mother's bedside in uncovered street clothes, and sometimes visitors with severe colds or visible cutaneous lesions are admitted. Frequently there is no age limitation for visitors to the mother, and the children, who are the most frequent hosts and carriers of infection, are permitted to have contacts with the mother. If visitors could be adequately restricted, the desirable goal of close relationship between mother and infant might sooner be realized without the present appalling risks.

To examine nurses carefully and exclude from the nursery any who are found to harbor infection is an elementary precaution that is not universally observed. In many institutions nurses do not wear masks and gowns while caring for infants. Requirements for physicians are subject to precisely the same criticism.

2. Inadequate isolation of the infants from one another is also a possible means of spreading infection. It is common practice to have large nurseries in which in certain instances more than 30 infants are

---

From the Departments of Pediatrics and Obstetrics, Long Island College of Medicine, Long Island College Hospital Division.

Read before the Section on Pediatrics at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

quartered in a single room. They may be but a few inches apart, and even if they are farther apart their presence in a single large room gives maximum opportunity for the spread of all types of infection to this large group.

3. A third means of spreading infection is its transmission through some intermediary.

a. The primary factor in this spread is the time-honored practice of the blanket assignment of nurses who are on duty in nurseries. That is, a nurse is assigned to certain general tasks, such as the bathing or feeding of a large group of infants or the administration of medication to the entire group. The clearly desirable alternative is the assignment of the entire care of a small group of infants to an individual nurse. It is obvious that each nurse who has a general assignment will have contact with all the babies in a unit, whether the unit is large or small, and that if infection is present she might carry it to all the infants with whom she has contact.

b. Another important item is the common bathing and weighing room. Usually there is but one room for this service in each nursery, and if two nurseries adjoin each other such a room may be used for both nurseries. In any case, every baby in either one or two large units is taken to a central place, which becomes contaminated if and when infection attacks any infant or infants in the group. With such a setup it is inevitable that there should be widespread transmission of infection when it occurs.

c. Similarly, infections spread because of inadequate facilities for sterilization. The usual practice has been to locate the formula room for the preparation of fluids, milk mixtures and materials of all sorts for infants on the same floor as the nurseries or, worse still, adjacent to the children's medical wards. The average formula room is a single room to which utensils are usually returned without sterilization after their use by patients. Naturally, the entire formula room may be contaminated if any infant in any nursery or other unit served by it has become infected. The precautions which heretofore have been relied on as effective are these: Bottles, nipples and utensils are washed and sterilized in the formula room. Once the sterilization has been completed, the room is usually washed with soap and water and the persons who are to prepare the mixtures thereupon follow a technic which is surgically correct in preparation of the milk mixtures and materials. These precautions are worthless, however, for any contamination which has been introduced at any time is still present and contaminates the mixtures under preparation, and eventually the infants to whom they are given. Furthermore, milk and other foodstuffs are taken into the formula room without special handling designed to avoid the introduction of contamination from outside. Of course, pasteurization or autoclaving could obviate such error and is to be recommended.

d. Of particular interest is the common utility room: This ancient institution is even more dangerous as a means of spreading infection than the common bathing and weighing room. Such a room is usually located on the same floor as the nurseries and is used as a storage room for milk mixtures and other materials needed in the nurseries. Before the feedings are given to the infants, the bottles are warmed and the nipples are adjusted in this room. Nurses who use the facilities of the utility room may come from any unit on the floor, perhaps even from the units for the isolation of infected infants and those in the suspect nursery. It is obvious that any contamination which is brought to the utility room from any source must inevitably be widely distributed by all who use that room.

e. Another menace is the proximity of isolation units to uncontaminated units: It is common practice to locate isolation nurseries on the same floor as the uncontaminated nurseries or even to make these isolation facilities an integral part of the uncontaminated nursery setup. Only the perfect isolation technic such as is used in the best managed hospitals for infectious disease can possibly afford protection when such a setup obtains. This perfect technic is rarely employed in maternity hospitals, but certainly could be introduced to general advantage.

CORRECTIVE MEASURES SUGGESTED

In the hope and expectation that we could correct many of the defects noted, we have made extensive changes in the nurseries at the Long Island College Hospital in Brooklyn, which were completed except for one step by May 1937.[1] The service in which these changes have taken place is located in a general hospital in Brooklyn, which cares for about 1,500 infants annually. Before these alterations were made, the routine was similar to that used in first class teaching hospitals. While our results have compared favorably with the best so obtained, they were not satisfactory in our opinion. When infection occurred, its spread could not always be limited by the application of the familiar methods of management.

The discussion of the corrective measures will follow in the same order as did the discussion of the defects. First, then, the limitation of unnecessary contacts with visitors, nurses and physicians.

1. a. Visiting hours for ward patients have been limited to five hours a week. The visitors are masked and gowned and by means of rope barriers are separated from the beds in each public ward so that they are least liable to contaminate the mothers or their bed units. It is admittedly a concession to popular opinion that visiting hours are as many as they are and are countenanced at all, even under these conditions.

b. Nurses are required to wear masks and gowns at all times while caring for infants in the nursery. Routine cultures are made of material from the throats of nurses who are about to come on duty in the nurseries. If dangerous organisms are found, the nurse is relieved of her duties. Complete studies are made to determine whether her infection is in any way a menace to the infants who have been under her care.

If so, the nursery affected is quarantined, and the infants in it are treated as indicated by the studies made.

c. A physician must wear mask, gown and sterile gloves on entrance to any nursery for newborn infants. He must examine the infant in the special examining room attached to every unit unless there is an emergency which takes him into the nursery proper. If the physician passes from one unit to another, he must change his mask, gown and gloves for every unit entered. House officers are assigned to individual nursery units and are not shifted unless they are ill or terminate their service in the nursery. This refinement should not be necessary if strict technic is observed. If they become ill, they are relieved of their duties and are studied to ascertain whether their illness will in any way affect the infants who have been under their care. If so, the nursery affected is quarantined, and the infants in it are treated accordingly.

---

[1] Weymuller, C. A.: Measures for the Protection of Newborn Infants, Child 5:215 (March) 1941.

d. Ward maids and cleaning women in the nurseries are subject to the same regulations as nurses and physicians and are rigidly supervised by both.

e. Every nursery unit has in its examining room complete medical equipment, so that no contamination can occur by way of stethoscopes, otoscopes or other instruments which might be brought in by the attending or house staffs.

f. All bedclothing, diapers and clothes for the infants in the nurseries are sterilized by autoclave. Each infant's supply for the day is stored in a shelf under his crib. Thus, only his own nurse comes in contact with his supplies. A further most practical refinement is the sterile packet devised by our nursing staff for the infant at bath time. This packet contains sterile cotton balls for laving the infant's eyes with normal saline solution, a sterile shirt, diaper and dress, and a sheet and blanket for the infant's bed. This is in sharp contrast with the usual practice of having a central supply room.

2. We have made our nursery units as small as our physical plant would permit. As can be seen from figure 1, each main unit consists of a room containing sixteen cribs, an adjoining but separate room for weighing and bathing, and an examining room partitioned off for the use of physicians. If we had complete freedom of action we should have the units contain 8 infants. (Although it will again be mentioned, it should be observed that each unit has a refrigerator for the storage of milk mixtures, a bottle warmer, a sterilizer and a scrub sink.) The cribs of each unit are arranged in two groups of eight and are never interchanged.

3. The measures taken to prevent the spread of infection from infant to infant through an intermediary are as follows:

a. The assignment of nurses caring for newborn infants has been changed so that one nurse cares for but 8 babies of full term and 1 premature baby. The nurse is assigned for complete care of these infants; that is, she takes them to their mothers to be nursed or gives them their milk mixtures or fluids, bathes them, weighs them and cares for them in every particular. This personal, individualized service permits the nurses to know in detail the condition of the mothers and babies in their charge. If they follow the required technic, they cannot transmit any infection beyond their group, much less beyond the ward of 16 in which they function. This is one of the greatest improvements which we have made and is, we believe, unique. Until war shortages forced a change we were able to function most satisfactorily. The circumstantial breech of this ideal setup caused us considerable difficulty which will later be described.

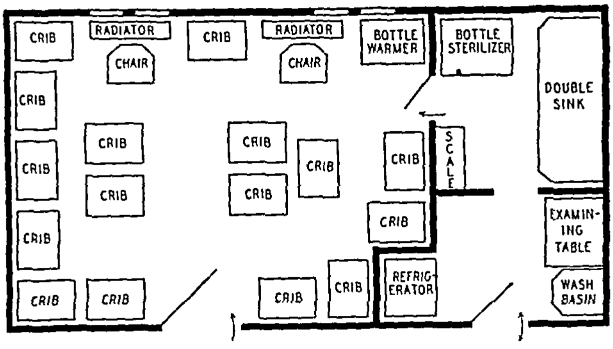


Fig. 1.—Typical nursery unit for newborn infants.

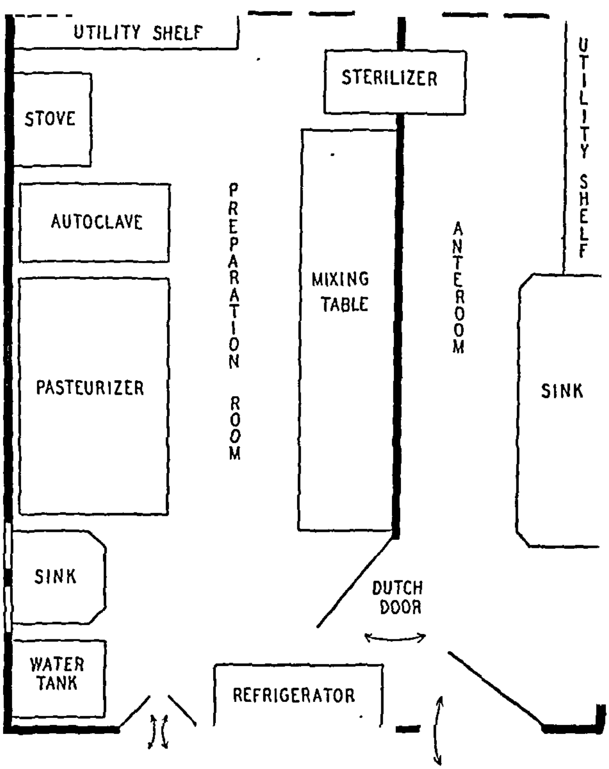


Fig. 2.—Present formula unit.

The formula room is in a section of the hospital entirely removed from the nurseries or sick patients. Ideally, we believe that it should adjoin the unit in the clean surgical division where sterile solutions and similar materials are prepared or, second best, perhaps the diet kitchens. The formula room is so arranged that contamination from outside the hospital or from any unit in the hospital is reduced to the minimum. All materials and utensils which enter the formula room pass through the sterilizer, which extends through the wall between it and the anteroom, or over the Dutch door (fig. 2). The sterilizer, of course, will destroy all contaminants. A special technic has been worked out to permit the use of the Dutch door and still avoid the introduction of contamination.

Once in the unit, these materials are made into milk mixtures according to formula, placed in sterile bottles, capped with sterile nipples and covered with sterile glass caps. All this is done by trained nurses in sterile gowns, masks and gloves. These nurses are carefully supervised and inspected and are relieved of duty immediately whenever they are ill. Their throats are cultured at the beginning of their term of duty in the formula room and subsequently whenever indicated. Although all these precautions are taken before and during preparation of mixtures, it is nevertheless considered that there might be contamination by air, hands or otherwise. Therefore the milk mixtures and other fluids are pasteurized at 140 to 160 F. for thirty minutes. Repeated cultures of mixtures so prepared have shown that they are sterile. If formulas were autoclaved after preparation in a clean formula room, the need for aseptic technic might be obviated. However, certain mixtures curdle when they are autoclaved and require buffering to counteract this.

All the bottles, nipples and utensils which return to the formula anteroom from any unit for infant or child care in the hospital, such as the nursery for newborn infants, the children's surgical ward or the children's medical ward, are washed and sterilized in the unit where they are used before they come to the anteroom. They are again cleansed and sterilized before they are delivered to the formula room proper.

When milk mixtures have been completely prepared, the bottles are passed through a window in the formula room and are then transported in a closed cart, used exclusively for sterile milk mixtures, to the unit where they are to be used. Each unit has its own refrigerator to receive these mixtures and materials.

d. A common utility room is not needed, because each unit has its bottle warmer, its sterilizer and scrub sink, and plenty of utensils. As all utensils are cleansed and sterilized before they leave the unit, contamination cannot be spread to other nursery units or to the formula room.

e. Proper isolation units are provided both for observation of suspected cases and for infants who are known to have transmissible diseases. The suspect nursery unit of eight or more cribs is located across the hall from the clean nurseries and is completely separated from them. It is equipped in the same way as are the larger nurseries (fig. 3). Infants who are suspected of harboring transmissible diseases are observed there until discharged from the hospital. This includes infants who have had numerous or loose stools. The nursing and medical personnel and the equipment of the intermediary isolation unit are complete and independent of all uncontaminated units. If infants prove to have true diarrhea, epidemic or not, they are transferred to the pediatric department ward, where rigid isolation technic is observed

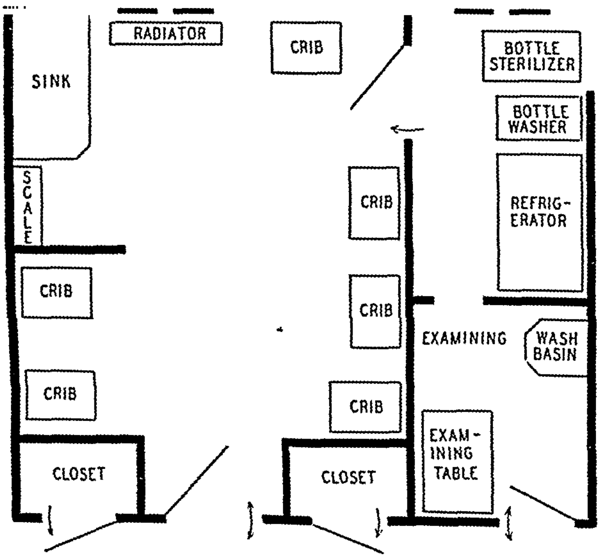


Fig. 3.—Suspect nursery unit.

Therefore, if any infant in any unit has infection the following steps are taken:

1. The affected infant is immediately isolated. For infections of any importance complete isolation is instituted at once.

Comparison of Three Routines for Care of the Skin of Newborn Infants

Method	Total Cases	Cases of Pyoderma	Incidence per Thousand Cases
A. 1930-1940 1. Isolation 2. Closure of nursery 3. Local treatment (various)	10,534	130	12.3%
B. 1940-1942 1. Inunction with 2% ung. hydr. am. 2. Isolation 3. Reinunction of contacts with 2% ung. hydr. am. 4. Closure of nursery 5. Local treatment with 5% sulfathiazole ung. (emulsion base)	3,064	35	11.0%
C. 1942-1946 1. Inunction with 15 Gm. 5% sulfathiazole ung. (emulsion base) 2. Isolation 3. Reinunction of contacts with 5% ung. sulfathiazole 4. Closure of nursery 5. Local treatment with 5% ung. sulfathiazole	8,727	8	0.9%

2. The unit from which this infant came is closed to further admissions until the hospital physicians feel certain that new cases will not develop.

3. The nursing and medical personnel of the unit involved observe the most meticular aseptic technic and carefully observe every exposed infant for the development of symptoms.

4. When a contaminated nursery has been emptied, it is thoroughly washed with soap and water and aired; it is not reopened for twenty-four hours after cleansing. All cribs and mattresses are specially treated.

PROPHYLAXIS OF PUSTULAR CUTANEOUS INFECTIONS

As we reported[2] in May of 1945, we had by that time anointed 3,205 infants just after birth with 15 Gm. of 5 per cent sulfathiazole in an emulsion ointment base, in an attempt to prevent pustular infection. If the infants were exposed, we reanointed them with this preparation, closed the nursery and treated any infant having pyoderma by evacuating pustules under 70 per cent alcohol; we then made frequent local applications of 5 per cent sulfathiazole water-soluble ointment.

The results have been excellent. From August 1942 to May 1946 there have been only 8 sporadic cases of pyoderma in 8,727 infants, without spread to neighboring infants in the same nursery or to those in adjacent nurseries. The blood sulfathiazole levels, blood counts and urinalyses were not significantly altered in a preliminary study.[1] Of the 8,727 infants who had had prophylactic inunction with 5 per cent sulfathiazole ointment in an emulsion base, 126 were readmitted for serious illnesses which required full dosages of sulfonamide compounds. One hundred and three were admitted once for heavy treatment with sulfonamide compounds; 15 infants had two such admissions; 6 had three; 1 infant had four, and 1 had five such admissions. In none of the 126 infants was there any evidence of sensitization to sulfonamide compounds.

---

[2] Weymuller, C. A., and Ittner, E. J.: Sulfathiazole Ointment for Prevention and Treatment of Pyodermas of Newborn Infants, Am. J. Dis. Child. 69: 283 (May) 1945.

SUMMARY

Section I describes the following measures employed since May 1937 at Long Island College Hospital for the protection of newborn infants:

1. Small nursery units were substituted for the customary large nurseries.

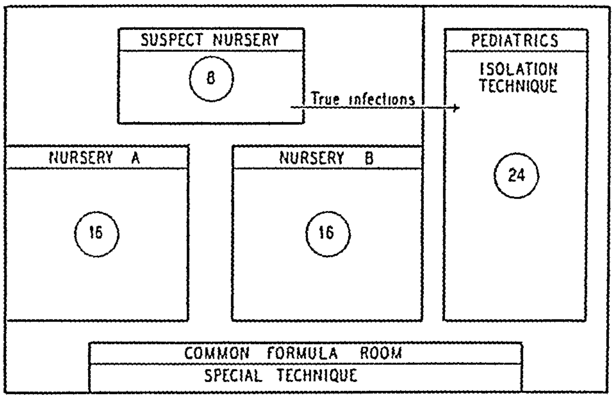


Fig. 4.—Setup in Long Island College Hospital for care of newborn infants. Because of a wartime shortage of nurses, nurses from A and B were caring for infants in suspect nursery.

2. All facilities required for care of newborn infants were duplicated in each nursery unit, a measure which eliminated the common utility room, the common linen store room, the common drug closet and the instruments used in common by the pediatricians and nurses as factors in spreading infection.

3. Nursing personnel was assigned to each nursery unit, so that absolute control of this element is secure. A common formula room was so constructed and managed that separate formula rooms for each nursery unit are unnecessary.

A brief report of the results of prophylaxis against pustular cutaneous infections is included.

II. Practical Experiences with Prophylaxis of Diarrhea: Management of a Diarrhea Epidemic

Following is a brief report of our practical experience with the measures instituted for the prophylaxis of diarrhea of the newborn and how we managed an epidemic of diarrhea which followed a compulsory failure to observe them. It is hoped that with the help of the diagrams presented the important points will impress themselves on the reader and so be of use in the protection of newborn infants from diarrhea.

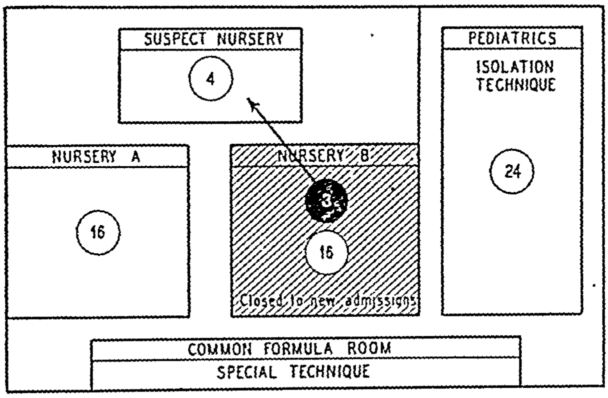


Fig. 5.—Situation on first day of diarrhea outbreak, Oct. 23, 1945.

First of all, we evolved our prophylactic program because a potentially tragic experience made us realize how vulnerable we were. From 1929 to 1937 we did not have any trouble from diarrhea, with all the gates open. Then a mother who had had Flexner dysentery at her sixth month of pregnancy (unreported to her physician) was delivered at Long Island College Hospital. On the seventh day her infant had many loose stools, was isolated and was successfully treated. Had that infant really had Flexner dysentery, which it fortunately did not have, the approximate contacts were 40 infants in four adjacent, unprotected nurseries, 25 patients in the children's surgical ward, 25 patients in the children's medical ward, the private patients and the entire medical nursing and service personnel. A good many more than 90 persons were in jeopardy, because we had a hospital setup like many another, which was entirely unsound for the management of enteric infection, whether specific or not. We escaped in this instance, but resolved not to tolerate the continuance of conditions which could repeat this hair-raising experience. Accordingly, our set-up was altered in the manner described in section I, at low cost and in an old hospital of rigid design.

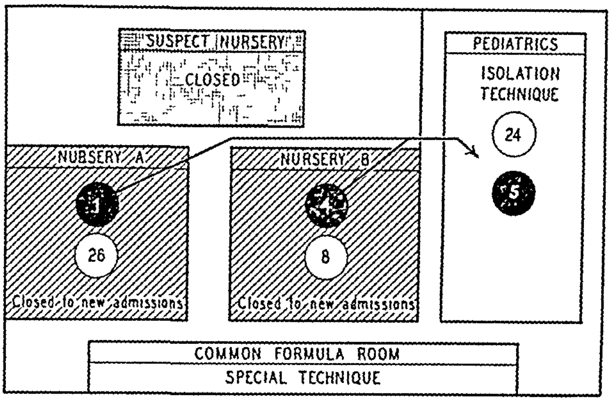


Fig. 6.—Diarrhea outbreak, six days after inception (October 29).

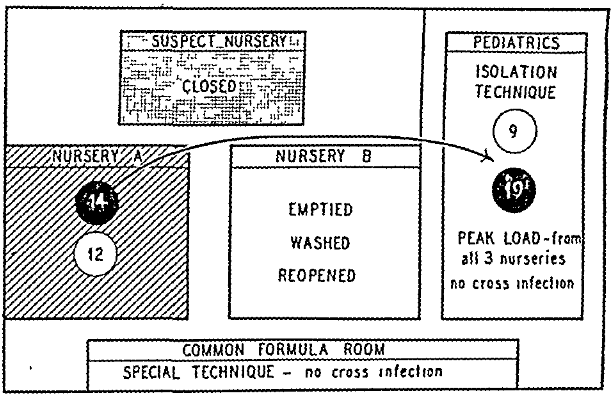


Fig. 7.—Diarrhea outbreak, seven to ten days after inception (October 30 to November 2).

We got along beautifully and soundly from May 1937 to October 1945 with our prophylactic technic. For months during the last years of the war we were so short of nurses that our technic was necessarily violated, and these errors caught up with us on October 23, 1945.

The day before the outbreak there were 40 infants in three of the nurseries: 16 in nursery A, 16 in B and 8 in the suspect nursery (fig. 4). None had diarrhea. All these infants and those in the twenty-four bed pediatric ward received formulas made in the common formula room under special technic.

Unfortunately, wartime shortages required the nurses in A and B nurseries to care for infants in the suspect nursery, thus converting the setup into a single nursery *completely* inadequate to protect against diarrhea, whether specific or nonspecific.

On the first day of what proved to be an epidemic (fig. 5) 3 infants who had moderately loose stools were transferred to the suspect nursery, and B nursery was closed to new admissions. Within six days (fig. 6) 3 more cases had developed in B nursery and 1 case in A nursery. Obviously, therefore, the personnel from A nursery had carried the contamination from the suspect nursery to complete the circle. Meanwhile, of course, the suspect nursery had been closed, since all infants with diarrhea had been transferred to the pediatric wards under strict isolation technic. By the sixth day of the epidemic a total of 5 infants had contracted diarrhea in a moderately severe form and had been transferred to the pediatric wards.

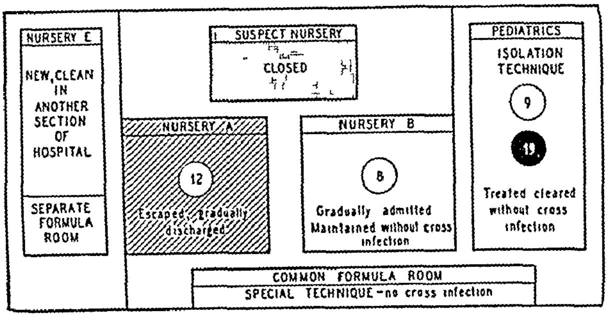

NURSERY E
NEW, CLEAN IN ANOTHER SECTION OF HOSPITAL
SEPARATE FORMULA ROOM
SUSPECT NURSERY
CLOSED
NURSERY A
12
Escaped, gradually discharged
NURSERY B
8
Gradually admitted Maintained without cross infection
PEDIATRICS
ISOLATION TECHNIQUE
9
19
Treated cleared without cross infection
COMMON FORMULA ROOM
SPECIAL TECHNIQUE-no cross infection

Fig 8 —Progress of diarrhea outbreak.

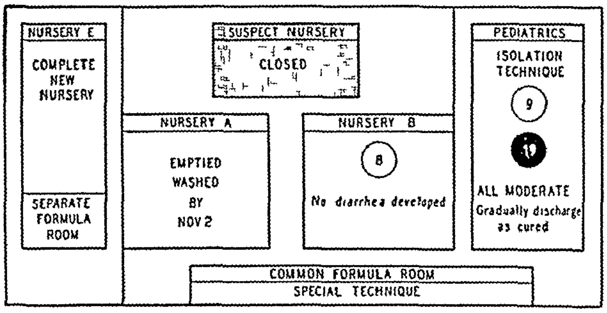


Fig. 9 —Diarrhea outbreak, eleventh day after inception (November 2)

It is to be noted that a common formula room was used for all units for infant care and that there were uncontaminated infants in the pediatric wards, in rooms adjacent to those in which there were patients with diarrhea. Even so, with enteric precautions, cross infections did not occur in the pediatric unit, or in any other unit of our hospital.

Immediately after the diarrhea epidemic began, the unit system was rigidly reestablished. Attending staff, house staff and nursing and service personnel were assigned either to clean or to contaminated units, never to both, and were not exchanged. Obviously, many institutions could not mobilize so large a personnel, and if technic is rigidly observed, this should not be necessary.

SECOND STAGE OF EPIDEMIC

From the seventh to the tenth day after onset, 14 more infants had acquired diarrhea and were transferred to the pediatric ward (fig. 7). The 12 remaining infants in the contaminated nursery A escaped entirely and were discharged at the usual time.

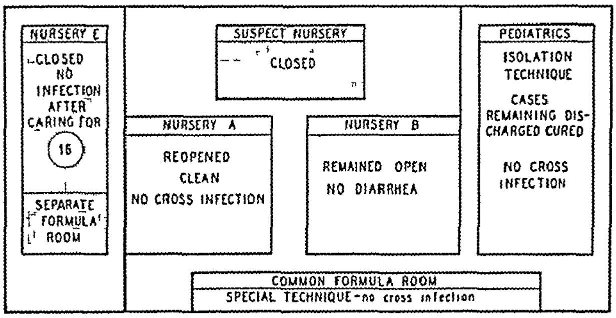

NURSERY E
CLOSED NO INFECTION AFTER CARING FOR
16
SEPARATE FORMULA ROOM
SUSPECT NURSERY
CLOSED
NURSERY A
REOPENED CLEAN NO CROSS INFECTION
NURSERY B
REMAINED OPEN NO DIARRHEA
PEDIATRICS
ISOLATION TECHNIQUE
CASES REMAINING DISCHARGED CURED
NO CROSS INFECTION
COMMON FORMULA ROOM
SPECIAL TECHNIQUE-no cross infection

Fig 10 —Conditions during final days of diarrhea epidemic

By the seventh day, the problem of the care of uncontaminated newly born infants had to be met. Accordingly, permission was given to clean up nursery B, staff it with an entirely new and independent crew and open it for admissions. Eight infants were gradually admitted into this unit and were maintained without cross infection until their customary day of discharge. It should be noted again that the formula room which serviced the reopened nursery B also served contaminated nursery A, the 19 infants with diarrhea on the pediatric wards as well as the uncontaminated infants on the pediatric ward. This was done without cross infection; a real proof that this system is a good sound one, if similarly administered.

THIRD STAGE OF EPIDEMIC

On the eleventh day of the epidemic it was recommended by the New York Health Department (fig. 8) that a new and independent nursery, complete with formula room, be set up in another portion of the hospital. This nursery cared for 16 uncontaminated infants during the last days of the epidemic, without cross infection, just as was true of clean nursery B. However, nursery B, though just as effective, was adjacent to the contaminated nursery and was serviced by the common formula room. The point is worth reiteration that if facilities for the establishment of a new nursery complete with formula room cannot be produced, completely effective protection may still be accomplished by capable administrators, as we have hereby proved (fig. 9).

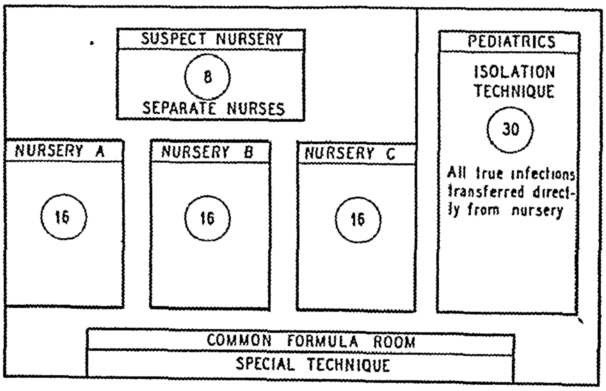


Fig 11 —Present setup at Long Island College Hospital.

FOURTH STAGE OF EPIDEMIC

As was noted, new nursery E cared for and discharged 16 infants without disturbance; nursery B, adjacent to contaminated nurseries, remained open successfully throughout the epidemic to receive uncontaminated newborn infants. Soon nursery A was reopened to new admissions without cross infection. The 19 affected infants in the pediatric wards recovered from diarrhea. Those infants adjacent to them on the pediatric wards did not acquire cross infection (fig. 10). A common formula room was used for all infants in the hospital, sick or well, except those in nursery E, the new, independent unit.

CONCLUSION OF EPIDEMIC

From the last day of the epidemic to date we have reestablished our nurseries on a unit system (fig. 11), and if nursing shortage again forces a change our only concession can be to reduce the patient load in one clean nursery. For example, nurses of nursery B might be assigned to the care of the suspected nursery. Admittedly, contamination from other nurseries which has been brought to the suspect nursery might thus be carried to nursery B. However, with proper technic it will stop there. Thereby the remaining nurseries will be protected and at least one completely clean unit will be available.

SUMMARY

Because of nursing shortages the effective prophylactic technic employed from 1937 to 1944 could not be observed. An outbreak of diarrhea in October 1945 passed through three nurseries which error had converted into one nursery and affected 19 infants. These infants all recovered from the diarrhea.

The progress from unit to unit is portrayed in the diagrams.

It was proved (1) that a common formula room for all hospitalized infants, sick or well, may be successfully used without cross infection in the hands of meticulously careful administrators; (2) that a clean nursery may be operated immediately adjacent to a unit contaminated with diarrhea without cross infection, if our technic is meticulously observed, and (3) that, as is generally conceded, an entirely new unit, complete with formula room and independent personnel, may be operated without cross infection. These measures have proved effective, practical of operation and at a cost level within the means of all who might be entrusted with such an important responsibility.

ABSTRACT OF DISCUSSION

Dr. Francis Scott Smyth, San Francisco: I think Dr. Weymuller's paper is most appropriate for those who are contemplating new building programs. Pediatricians must be on constant vigilance to keep up technics. Modern obstetrics demands that mothers come to the hospital for delivery, but I have a growing suspicion that the newly born infant would do better in the home. It seems to me that in many places the newly born infant is treated as on an assembly line, and it has been my observation that if one wishes to detect the nursing shortage, for example, the place to detect it is in the nursery. I should like to have had Dr. Weymuller discuss the use of propylene glycol or aerosol treatment. We are in the process of designing, we hope, a fine nursery for the future. At present I envy him with his apparent extra space where he can shift from nursery to nursery without any difficulty. The hospitals have been so crowded here in this city that I think we too are at the present time on rather thin ice when it comes to the danger of epidemic infection.

MODERN TREATMENT OF CHRONIC SINUSITIS

LELAND G. HUNNICUTT, M.D.
Pasadena, Calif.

By modern treatment of chronic sinusitis is meant the current treatment, whether it is old or new. To discover the source of the current treatment it is necessary to examine not only the work of the present generation but that of generations of the past.

In reviewing the literature, it was found that most of the present methods of arriving at a diagnosis of chronic sinusitis and the fundamentals of surgical procedures were in Dr. Hajek's book of 1898. In the foreword of the last edition, published in 1926, Heitger and Hansel, the translators, stated: "The first edition, published in 1898, placed anatomy, pathology and therapeusis of suppurative affections of the nasal accessory sinuses, for the first time on a solid foundation. In subsequent editions, a most significant and impressive feature is that Dr. Hajek found it unnecessary to retract or modify a single basic principle originally presented."

Since Hajek's time there have been improvements in surgical and in diagnostic procedures, but the greatest advance has been a better understanding of the physiology of the nasal mucous membrane. Having in mind what the normal nose is like, one can direct the treatment toward reestablishing this healthy state. This normal, healthy state means adequate aeration and drainage of the sinuses. To carry away foreign material, a tough mucous blanket propelled by cilia moves toward the nasopharynx. In planning treatment of chronic sinusitis, it is of great importance not to do anything which might permanently injure this mechanism of nasal cleansing. Medicaments must not have irritating chemicals. The p_H must be compatible with ciliary action. Structures necessary for humidifying and directing air currents should not be removed by surgical treatment, which must be planned in such a way that it does not destroy the glands so necessary for the maintenance of the mucous blanket protecting the cilia. An exception to this is when the membrane is so diseased it cannot recover.

AID FROM THE INTERNIST AND THE PEDIATRICIAN

The internist can help by carefully eliminating causes of the symptoms of chronic sinusitis, other than local conditions in the nose. His history and physical examination may show that a person has glandular dyscrasia and is apt to have disturbances of the mucous membrane. A dietary deficiency, including deficiency of vitamins and minerals, or inability to handle certain foods may cause a reflex upset in the nose. Certain habits, such as late hours, smoking, alcohol, excessive eating and worry, may produce congestion of the nasal membranes with the attendant lowering of resistance and secondary infection of the sinuses. The internist should be critical of the rhinologist's medication for the nose, as it may cause a chronic congestion and secondary effects.

The pediatrician can help the rhinologist by eliminating the factor of allergy and the overuse of nasal medication. The dietary problem is as important as in the adult, but this has usually been disposed of in the pediatrician's routine care of the child. Not infrequently the correction of some of these conditions by the internist or the pediatrician will clear up what is simulating a chronic sinusitis.

Read before the Section on Laryngology, Otology and Rhinology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

Having received this help from the physicians who refer the patients to us, we rhinologists then have a definite obligation to them. We must report to the physicians the involvement of the sinuses, the treatment anticipated and the prognosis. If the condition is serious enough to warrant the consultation, then we must make every effort to clear up the complaint.

DECISION AS TO TREATMENT

The rhinologist, like the tracker of wild animals, is trained to observe the signs which have significance in leading to the "prey"—in this case, to the chronic sinusitis. Often there is a history of excessive blowing of the nose and overmedication. If so, the patient cannot be properly evaluated until he has gone for a period of about four days without nose blowing and nasal medication. After about four days, the nasal mucous membranes will have a chance to return to normal as much as is possible and a better evaluation can be made. Since the patient is usually miserable because of nasal congestion and accumulation, a mild sedation may be used at bedtime. By the end of four days, the congestion is less and the secretion has been retrained to go posteriorly, the normal direction.

A roentgenogram is ordered at the time of the first visit, and at the second visit a rather complete evaluation of the chronic sinusitis can be made. The roentgenograms must be taken in the proper positions to determine the degree of disease in all sinuses. Complete roentgenologic interpretation is sometimes lacking until involved sinuses are irrigated. With these data at hand, usually the treatment can be outlined. The roentgenograms alone may indicate the need for surgical intervention; for instance, when they disclose chronic frontal sinusitis with osteomyelitis.

Inspection of the nose includes the search for any obstruction which would prevent proper flow of air or interfere with drainage of the sinuses. Obstructions may be from a deviated septum, a large turbinate or polyps. Correction of these may be necessary for reestablishing normal flow of air and drainage. Inspection is continued, an attempt being made to follow leads, as indicated by inflamed areas of mucous membrane and pus, to sinuses which are involved. The roentgenogram helps in looking for these leads. The nasopharyngoscope and the nasopharyngeal mirror, if used frequently, are good aids in noting anatomic and pathologic abnormalities. Repeated examinations are often necessary to discover pus coming from the sinuses draining into the middle meatus.

Bacteriologic and cytologic studies are made from the nasal passage as well as for the sinus cavities. The finding of eosinophils, especially if they are associated with swelling of the mucous membrane and polyps, means that the underlying allergy must be treated. Not infrequently, control of allergy means a clearing up of the chronic sinusitis because adequate drainage and aeration are reestablished. Diagnostic washings should always be done in the maxillary and sphenoid sinuses. An attempt should be made to wash the frontal sinus, if it appears to be infected.

NONSURGICAL TREATMENT

The treatment of chronic sinusitis in children is usually nonsurgical. Removal of infected tonsils and adenoids may eliminate frequent infections which keep up the sinusitis. When pus stagnates along the floor of the nose, removal of it by spot suction will permit the reestablishment of movement of the mucous blanket and facilitate drainage from the sinuses. Spot suction in the upper recess of the middle meatus has a similar beneficial effect on the ethmoidal cells.

Gentle nasal irrigation, with warm solution of sodium chloride and sodium bicarbonate, after general shrinkage removes excess mucus and pus and again permits a more efficient mucous blanket to function. This is of great value, especially for combined allergy and chronic sinusitis in children. Irrigation of the maxillary sinus by way of the normal ostium can frequently be accomplished in children. This should be done whenever possible, as it speeds up the clearing of the infection.

Local use of sulfonamide compounds and of penicillin is of questionable value for the chronic infection but of value for the acute exacerbation when the new pathogen is sensitive to the chemotherapeutic agent. The same can be said for administration of sulfonamide drugs by mouth and of penicillin hypodermically. Local use of a sulfonamide compound is of much value when it is lightly applied to a sinus cavity after removal of the lining in that it keeps down infection for a short time while the granulations are starting. Penicillin given hypodermically before and after radical operation on the sinuses is also a valuable aid in keeping down postoperative secondary infection.

Bacterial filtrates in the nose and sinuses are not as enthusiastically used as in the past, but there are times when they seem to be of value. In trying to clear up a chronic infection in the sphenoid sinus without surgical intervention when irrigations have been unsuccessful, it is worth while to instill an autogenous bacterial filtrate. Vaccines have apparently fallen into disrepute; in my experience, they have not been of value. Roentgenologic treatment of chronic sinusitis has proved of no help.

SURGICAL TREATMENT

Surgical treatment is directed toward improving ventilation and drainage of the sinuses and removal of diseased tissue. In examination of sinus linings removed in past years, rarely is chronically infected tissue found which is not capable of becoming a useful membrane if present knowledge of treatment is applied. The majority of the specimens show eosinophils, plasma cells and edema; they rarely show degenerative changes to the extent of being irreversible. This story of the past should be borne in mind while the present surgical procedures are considered.

Nasal Cavity.—A submucous resection of the septum should be done if it obstructs. Polyps should be removed, as little damage as possible being done to normal structures. Refraction of the middle turbinate should be done if the middle meatus has inadequate space. Crushing of the middle turbinate may be necessary if it is enlarged because of a turbinal cell.

Maxillary Sinus.—After repeated irrigations of the maxillary sinus, whether by the natural ostium or by puncture, if the infection continues an adequate window opening is made in the inferior meatus. The normal ostium, which may have been partly blocked by edematous mucous membrane, now has a chance to return to normal and function once more. Too large an opening may cause changes in the sinus lining, according to Hilding's observations, which are not conducive to a healthy state. If there is a polypoid lining, there is a greater chance that the window opening will not suffice and that the lining will have to be removed. This is done if suppuration continues.

A maxillary sinusitis of dental origin which has foul pus usually necessitates removal of the lining. Several irrigations may temporarily clear it up but, with a new cold, it usually forms the foul pus again. The infected bone at the site of the old apical abscess seems to keep up the infection of the lining. Curetting out the infected bone and closure of a fistula are necessary.

Ethmoid Sinus.—Infection in the ethmoidal sinuses usually clears up without an ethmoidectomy if all infection is eliminated in the maxillary and frontal sinuses. However, if a careful follow-up is not possible after the maxillary sinus has been cleaned, it is often better to do an ethmoidectomy. Care should be taken to leave the middle turbinate intact.

Sphenoid Sinus.—Chronic infection in the sphenoid sinus usually clears with conservative treatment, but if repeated washings fail, then there should be conservative surgical intervention. The normal ostium may be enlarged or an opening made adjacent to the normal ostium which will permit the thickened mucous membrane that may be interfering with drainage to return to normal. Removal of the anterior wall and floor and stripping out the lining of the sphenoid are rarely necessary.

Frontal Sinus.—The frontal sinus usually responds to repeated irrigations. It may be necessary to remove one or two anterior ethmoidal cells, which make up the nasofrontal duct, for easy entry into the frontal sinus. This converts the duct into a frontal ostium. Even though the irrigator passes into the frontal sinus, there may be polypoid mucous membrane which is pushed aside only to block the ostium again after the irrigator is removed. It is necessary to create a clean, open middle meatus if the frontal sinus is to be given a proper chance to clear up. If conservative treatment does not eliminate suppuration, some form of the Lynch operation is done. If infection persists or there is osteomyelitis of the anterior plate, more radical surgical treatment may be necessary.

SUMMARY

A more adequate knowledge of the physiology of the nose and sinuses permits an approach to treatment with a definte goal in mind, that is, restoration of the nose to normal functioning and freeing the sinuses from disease.

The internist and the pediatrician can help the rhinologist by eliminating and treating conditions which contribute to chronic sinusitis.

Modern nonsurgical treatment includes so much more than in past years that much less surgical treatment of the sinuses is now necessary.

The recuperative powers of the mucous membrane of the sinuses are greater than was once supposed; hence its removal is less frequently done.

Careful planning of the treatment, whether it be nonsurgical or surgical, will result in many more cures of chronic sinusitis.

ABSTRACT OF DISCUSSION

Dr. Lewis F. Morrison, San Francisco: I do not come up here with as much pleasure as I did yesterday. I read the paper twice, and I did not quite believe it, for the reason that it is no example of the man's ability. It was a poor subject. Perhaps he was persuaded to take it against his inclination. He is a man of great ability; he has done a great deal, and he has much to offer us. It is a good summary, but there is not time now to go into the various small points, and I do not think that he would welcome my picking out one or two small points to discuss. The only thing which I want to bring forward to you is that this is no representation of what Dr. Hunnicutt really is, and the experimental work which he has done and the hours which he has spent in the laboratory. If you can get him off in a corner and talk to him, you will really find out what he is.

Dr. Robert C. McNaught, San Francisco: The title of the paper implies chronic sinus infection, which is now recognized as a comparatively rare condition in pure form. Most of what is called chronic sinusitis is not chronic infection but subacute infection prolonged in a person whose membranes react allergically. Its treatment by the so-called conservative methods is as surely doomed to failure as by the radical methods until something more basic is known about control of the allergic reaction. Dr. Hunnicutt attempted to cover only treatment. Mention was made of diagnostic methods, but the point of my remarks is that these should be emphasized because chronic sinusitis, if pure infection in the sinuses is meant, is a rare condition, and that most of the time should be spent on an accurate differential diagnosis so that the part which allergic reaction in the patient plays in the chronicity of his particular symptoms may be known. This diagnosis includes a careful history and, more important, a proper interpretation of that history. Roentgenologic examination, as mentioned by Dr. Hunnicutt, is only of accessory value. Bacteriologic studies are practically of no value. The diagnosis should be based on frequent and repeated lavage of the antrum, with study of the secretions obtained—microscopic study—for the presence of eosinophils or polymorphonuclear cells. At the time of the puncture note should be taken of the capacity of the sinus, which provides information as to the thickness of its lining. It also provides information about the patency of the ostium. All such information is necessary for planning of the treatment to be employed. Dr. Hunnicutt did not mention the Proetz method of irrigation, which I think is of distinct value in children. I am a little surprised, in view of the current talk about p_H, that he did mention the use of sodium bicarbonate in a nasal douche. The p_H, of course, brings up the question of nose drops. Nose drops have no place in treatment of any chronic nasal condition, whether it be chronic infection of the sinuses or one of the allergic states, because any transient benefits which may result are far outweighed in the long run by the secondary effects. Therefore p_H does not come into the question of chronic disease of the sinuses. As brought out by Dr. Hunnicutt, the modern trend in the treatment of chronic sinusitis is toward conservation of structure and function. He does not advocate conservatism in the sense of nonintervention.

Dr. Leland Hunnicutt, Pasadena, Calif.: I appreciate both of the discussions. In answer to Dr. Morrison's remarks, the subject assigned called for a presentation of the modern treatment of chronic sinusitis. An outline was prepared based on that which my colleagues and I use at the Los Angeles General Hospital for teaching the residents and as a guide for the teaching staff. Dr. McNaught criticized the use of sodium chloride and sodium bicarbonate for nasal irrigation because of improper p_H. This solution is used as an office treatment when it is desirable to get rid of thick secretion in order to make the nose more comfortable and allow the mucous membrane to function better. This is not done as a daily procedure. I still have great respect for the proper p_H of the solutions to be used in the nose.

OTIC COMPLICATIONS OF STREPTOMYCIN THERAPY

A Preliminary Report

EDMUND P. FOWLER Jr., M.D.
and
EWING SELIGMAN, M.D.
New York

Neurotoxic symptoms involving the vestibular and auditory systems may occur following streptomycin therapy. Hinshaw and Feldman[1] mentioned 1 case of transient deafness and 3 cases of apparent disturbances of vestibular function when large doses of streptomycin were administered over long periods of time. Molitor and his co-workers[2] found signs of pronounced disturbances of vestibular function in dogs after extremely large doses of the drug (ten to twenty times the usual human dose per kilogram of body weight). Mushett and Martland[3] did not observe pathologic changes in the central nervous systems of these dogs. The first specialized report of aural complications in human beings has been made by Brown and Hinshaw.[4]

Our series of 81 cases from a large military hospital consists of patients who received streptomycin during the period November 1945 to August 1946. During this same period approximately 80 other patients received the drug in this hospital. The particular patients in our group were used because of their availability at the time of our visits to the hospital. However, all patients on streptomycin therapy who complained of dizziness, tinnitus or impaired hearing were included. For this reason the patients showing complications can be considered the total number of such patients out of approximately 160 patients treated with streptomycin.

Patients with known disease of the ear were excluded from our statistics. Among these there were 2 cases of acute otitis media, 1 case of chronic otitis media, 1 case of brain abscess secondary to mastoiditis and 1 case of otosclerosis. There were 80 men and 1 woman; all were healthy adults before their present illness. Their ages ranged from 19 to 51; 64 per cent were in the age 20 to 29 group and 29.2 per cent were from 30 to 59. The diseases for which treatment was being given were osteomyelitis (71.6 per cent), and urinary infections (16.3 per cent); there was also 1 case of each of the following conditions: infection of soft parts, infected burns, subacute bacterial endocarditis, undulant fever and osteomyelitis and urinary infection in the same patient. The dosage was usually 3 Gm. streptomycin (3 million units) a day given intramuscularly 0.5 Gm. every four hours. The total dosage was small compared to that necessary for the treatment of tuberculosis. Nineteen patients received 20 to 29 Gm.; 16, 10 to 19 Gm.; 15, 30 to 39 Gm.; 14, 40 to 49 Gm.; 4, less than 10 Gm., and 1 a total of 141 Gm. Twelve patients were given more than one course.

The interval between the cessation of therapy and our initial examination varied from one day to six months. Incidentally, all patients had received penicillin therapy before treatment with streptomycin was started. Only 15 of the patients in the series were examined both before and after streptomycin therapy. Their initial poststreptomycin examination was made within one week after discontinuation of the treatment.

The initial examination consisted of an otic history, otoscopic examination, audiogram for air conduction and Kobrak caloric test, in the order named. For the Kobrak caloric test, the head was turned to the side, the external canal straightened by tension on the auricle and a medicine dropper of ice water at approximately 7 C. instilled. The head was turned on the other side after about five seconds to allow the water to escape, and then another dropperful was instilled and allowed to escape. The latency of onset of nystagmus was computed from the time of instillation of the first dropperful of water. If there was no response to this stimulus, several more droppersful were used. If there was still no response, ice water was run in with an irrigating can for five minutes or until a response was noted. A latency of more than forty seconds was arbitrarily designated as "delayed." This test is not quantitative; it merely detects labyrinths with serious hypofunction. It is planned to do accurate quantitative tests according to the technic of Fitzgerald, Cawthorne and Hallpike[5] in the future.

Table 1.—*Results of Examination of Eighty-One Patients After Streptomycin Therapy at Halloran General Hospital*

Audiometric			Vestibular		
	No.	%		No	%
Normal	26	32.1	Normal	65	80.2
Low tone loss (256 and 512)	1	1.2	Delay	13	16.0
High tone loss (2,896, 4,096 and 8,192)	42	51.8	Absent *	3	3.7
High and low tone loss	11	13.6			
All tone loss *	1	1.2			

* These figures probably represent all such cases out of the entire group of approximately 160 patients being treated with streptomycin at the same hospital during our study. All the other losses shown in this table are probably not due to streptomycin therapy. Audiometric losses are those commonly found in wounded military personnel. The delayed vestibular response occasionally occurs in normal persons.

The majority of these patients were confined to bed and had to be examined in the wards. It was impossible to control the outside noises under these conditions. Most noticeable was low tone interference due to the almost constant motor noises from airplanes, military vehicles and grass cutters. The overall ambient noise level varied considerably from time to time. The range was 35 to 65 decibels, the average close to 45 decibels. The 15 patients examined before as well as after streptomycin therapy were examined in the audiometric room of the Ear, Nose and Throat clinic. This room is not soundproofed and is exposed to much the same outside interference as the wards. For this reason a threshold change below a level of 30 decibels was considered unreliable.

Summaries of the results of these examinations are shown in table 1. Of 81 patients examined after streptomycin therapy, 53 (65 per cent) showed a high tone loss. Of these, 11 (13.6 per cent) showed a low

---

This investigation was supported by a grant from Merck & Co., Inc.

From the Department of Otolaryngology, Columbia University College of Physicians and Surgeons, and the streptomycin service of the Halloran General Hospital, Capt. Edwin C. Pulaski, Medical Corps, Army of the United States, Director.

[1] Hinshaw, H. C., and Feldman, W. H.: Streptomycin in the Treatment of Clinical Tuberculosis: A Preliminary Report, Proc. Staff Meet., Mayo Clin. **20**: 313, 1945.

[2] Molitor, H.; Graessle, O. E.; Kuna, S.; Mushett, C. W., and Silber, R. H.: Some Toxicological and Pharmacological Properties of Streptomycin, J. Pharmacol. & Exper. Therap. **86**: 151, 1946.

[3] Mushett, C. W., and Martland, H. S.: Pathologic Changes Resulting from the Administration of Streptomycin, Arch. Path., to be published.

[4] Brown, H. A., and Hinshaw, H. C.: Toxic Reaction of Streptomycin on the Eighth Nerve Apparatus, Proc. Staff Meet., Mayo Clin. **21**: 347, 1946.

[5] Fitzgerald, G.; Cawthorne, T. E., and Hallpike, C. S.: Studies in Human Vestibular Function: I. Observations on the Directional Preponderance of Caloric Nystagmus Resulting from Cerebral Lesions, Brain **65**: 115, 1942.

tone loss in addition to the high tone loss. None of the low tone losses were greater than 35 decibels, and losses of this magnitude are always subject to question unless the tests have been performed in a soundproofed room. The high tone losses ranged from 30 to 100 decibels in the 2,896, 4,096 and 8,192 frequencies, and we believe they were due to acoustic trauma. Hoople has found similar losses in 1,000 wounded military personnel.[6] Many patients showing appreciable high tone loss gave a history of shell burst nearby. These inferences are supported by the fact that the 15 patients examined before streptomycin therapy also showed similar high tone losses (12, or 80 per cent, showed high tone loss before the drug was given). One patient showed pronounced loss for all tones after administration of the drug. This was undoubtedly due to the streptomycin therapy, because his prestreptomycin audiogram showed only a slight high tone loss at a frequency of 8,192.

Table 2.—*Patients Showing Disturbances of Vestibular Function Following Streptomycin Therapy at Halloran General Hospital*

		Streptomycin Therapy				Vestibular Examination							
Case	Diagnosis	Days	Total Amount Gm.	Mfgr. and Lot No.	Last Day	Date	Spont. Nyst.	Romberg	Ice Water *	Water 30 C.	Water 44 C.	Rotation	Comment
2	Infected abdominal wound	10 3	30.0 9.0	Pfizer 461 Merck 398	5/ 5/46 6/13/46	6/19/46	0	Falls R	No resp. 5 min.	Not done	Not done	Not done	Audiogram: loss at 4,096 and 8,192
						8/ 8/46	0	Falls R	No resp. 5 min.	Not done	Not done	Not done	
						8/20/46	1°R	Falls R	Not done	Not done	Nyst. 1 min.	10 × 20 sec. nyst. 10 sec.	
						9/ 3/46	0	Falls R	Not done	Nyst. 40 sec. dur. 2 min.	Nyst. 40 sec. dur. 2 min.	10 × 10 sec. nyst. 10 sec.	
3	Peritonitis	14	51.0	Not known	7/ 6/46	8/20/46	0	Normal	No resp. 5 min.	Not done	Not done	Not done	Audiogram: normal
						8/28/46	0	Normal	No resp. 5 min.	No resp. 5 min.	No resp. 5 min.	10 × 10 sec.; no resp.	
						9/ 9/46	0	Normal	3 min. 1° nyst.	Not done	Not done	Not done	
4	Subacute bacterial endocarditis	18 4	58.5 11.0	Pfizer 461 Merck 398	5/24/46 5/28/46	5/29/46	0	Normal	No resp. 5 min.	Not done	Not done	Not done	Audiogram: normal
						8/ 8/46	0	Normal	No resp. 5 min.	Not done	Not done	Not done	
						8/20/46	0	Normal	No resp. 5 min.	Not done	Not done	Not done	
						8/28/46	0	Normal	No resp. 5 min.	No resp. 5 min.	No resp. 5 min.	No resp. 5 min.	

* All caloric stimulation was bilateral.

Table 3.—*Summaries of Audiograms in Case One*

	Right						Left						
Date	256	512	1,024	2,048	4,096	8,192	256	512	1,024	2,048	4,096	8,192	Notes
Air Conduction													
7/19/46	15	15	10	10	15	35	25	15	15	10	20	40	Prestreptomycin
7/2,/46	50	45	40	50	60	70	40	40	50	55	65	70	1st poststreptomycin
8/ 8/46	50	55	65	70	95	80	50	50	60	60	70	75	2d poststreptomycin
8/20/46	20	20	40	40	65	65	30	45	50	65	55	75	3d poststreptomycin
Bone Conduction													
8/20/46	20	50 (?)	30	45	55	↓	40	45	50	50	55	↓	Poststreptomycin

Caloric stimulation after streptomycin therapy revealed a normal response in 65 (80.2 per cent) patients. There was a delay in one or both sides in 13 (16.0 per cent). In 3 (3.7 per cent) there was absence of nystagmus after irrigation for five minutes with ice water. The significance of delay is difficult to evaluate with the test employed. Of the 15 patients examined before and after therapy 1 showed delay before and the same patient as well as 1 other showed delay after therapy. There is always some question as to whether a slightly subnormal response is significant.

None of the 3 patients lacking vestibular response to ice water was examined before streptomycin therapy. The observations in these patients are summarized in table 2. The vertigo in these patients reached a peak during or shortly after therapy and has shown a steady decrease ever since. All 3 are at present up and around, and the vertigo is not in itself incapacitating. Two of these patients had a persistently negative and 1 a persistently positive Romberg sign. Two of these patients have shown signs of recovery of vestibular response. One began to show recovery two months after the cessation of therapy; two weeks later responses to caloric tests and postrotational nystagmus were nearly normal. The other showed a first degree nystagmus after three minutes of irrigation with ice water two months after the streptomycin therapy was discontinued.

It should be reemphasized that the 4 patients who showed definite toxicity as a result of streptomycin therapy are probably all there were in the entire group of approximately 160 patients who were being treated with the drug during the same period in the Halloran General Hospital. Thus these cases would constitute less than 3 per cent of our series. Three of these patients complained of vertigo spontaneously before examination. In addition, 2 other patients complained of dizziness. One of these had received only 12 Gm. of streptomycin, and he did not complain until four days after the cessation of therapy. This was the day he read a newspaper article on the subject. The only observation in this patient was a high tone loss of

---

[6] Hoople, G.: Tr. Am. Otol. Soc., 1946, to be published.

40 decibels at a frequency of 8,192. He had a normal response to the Kobrak caloric test. The other patient had had dizziness on numerous occasions during febrile illnesses. She had been hard of hearing since late childhood. She noticed the symptom when she sat up for the first time after the cessation of therapy. There was considerable general weakness, and her debility at the time of the examination could easily account for some dizziness. Her Romberg sign was inconclusive. Her response to the Kobrak caloric test was normal. Her audiogram showed a decided loss for all tones. There was no prestreptomycin audiogram. She was not included in the statistics for this study because of the strong probability that she had previous disease of the ear (otosclerosis).

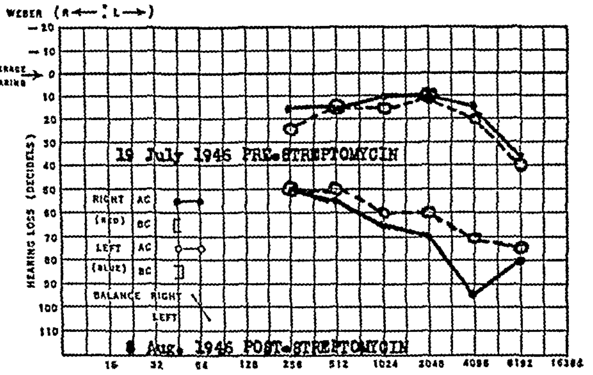
The streptomycin administered to 2 of the 3 patients lacking vestibular response bore the same manufacturer's lot number. In these 2 patients the first symptoms appeared during the first three days after the change from the drug bearing one lot number to that with another. In the third patient the manufacturer's lot number has not been identified. The patient showing impairment of hearing was treated with streptomycin from only one lot. Many other patients received streptomycin from these same lots in equal dosage without evidence of toxicity. If the cause were an excessive amount of an unknown impurity in certain lots of the drug, one would expect that more patients receiving that with the same lot number would be affected. If the toxicity were simply due to the amount of streptomycin given, one would expect to see symptoms in patients receiving the largest doses. The patient receiving the largest dose in our series (141 Gm.) had a response to the Kobrak test delayed for one and one half minutes eight days after the cessation of therapy; three months after this there was no delay. He did not have symptoms of toxicity at any time. His poststreptomycin audiogram showed nothing unusual. Certainly there must be an individual suspectibility to the toxic effects of the drug. It is an interesting fact that in both man and experimental animals otic symptoms have been caused by high potency streptomycin in lots derived from crystalline material and symptoms were not produced by some lots of the drug which were of extremely low potency.

REPORT OF CASES

Case 1.—A man aged 24 was given streptomycin because of chronic pyelonephritis. His prestreptomycin response to the Kobrak caloric test was normal. His prestreptomycin audiogram (see the accompanying chart) was normal except for a high tone loss at 8,192 frequencies. He received 3 Gm. of the drug a day for five days. His first poststreptomycin audiogram was made three days after the cessation of therapy and showed decided loss of hearing for all tones. Two weeks later this loss had become worse. Four weeks later it had lessened to a level better than that of the first poststreptomycin audiogram. He had not complained of deafness or vertigo; however, on questioning he stated that he had noticed a slight impairment of hearing after one or two days of treatment, but that it had not been troublesome. He had also noticed a slight bilateral hissing tinnitus. He had had similar symptoms nine years before when he started antisyphilitic treatments and since then had noticed some impairment of hearing from time to time. His father had been deaf as long as the patient could remember. The patient was unintelligent and uncooperative during the examination, but the differences between the prestreptomycin and the poststreptomycin audiograms are too great to be explained by this (table 3). He had a loss of bone conduction which would indicate a nerve type deafness. He was transferred to another hospital after the audiogram of Aug. 20, 1946. The drug used was Merck lot 396.

Case 2.—A woman aged 26 was under treatment for an infected abdominal wound. She received two courses of streptomycin therapy. The first was from April 25 to May 5, 1946 on a dosage of 3 Gm. a day. There were no symptoms of otic toxicity during this time. The drug used was Pfizer lot 461.[7] She was started on a second course of treatment with Merck lot 398 on June 10, 1946. The same day she began complaining of subjective vertigo. This consisted of a sensation of turning in bed. She was allowed to be up during the course, and the symptom became somewhat worse when she was upright. The course was terminated early because of this symptom. The initial otologic examination was done on June 19, 1946. The audiogram showed a high tone loss at frequencies of 4,096 and 8,192 bilaterally. The Romberg sign was positive, the patient falling to the right. There was a lack of response to irrigation of both canals with ice water for five minutes. This test was repeated on Aug. 8, 1946 with the same response. On August 20 she showed slight response to the instillation of water at 44 C. and to rotation. These responses were increased on Sept. 3, 1946 almost to the normal level. Her vertigo is at present not incapacitating.

Case 3.—A man aged 22 had peritonitis following a ruptured appendix. On June 22, 1946 he was started on streptomycin therapy and received 3.5 Gm. a day until July 6, 1946. The manufacturer's lot numbers of the drug have not been identified. About June 29 he began to complain of objective vertigo increased by shifting his gaze. The room seemed to turn first one way and then the other. This symptom remained the same until he was allowed out of bed; since then it has steadily lessened. He remained in bed during the entire course of treatment. He did not have deafness or tinnitus. Examination on Aug. 20, 1946 showed a normal audiogram. There was no spontaneous nystagmus. The Romberg sign was normal. Irrigation of both canals with ice water for five minutes did not produce nystagmus. Rotation ten times in twenty seconds failed to produce a response. On Aug. 21, 1946 there was no response to the instillation of water for five minutes at 30 C. and 44 C. and to rotation ten times in ten seconds. On Sept. 9, 1946 there was a 1 degree nystagmus of twenty seconds duration after irrigation of the auditory canals with ice water for three minutes. At present he has been discharged from the hospital and is able to work.



Audiometric examination (case 1) before and after streptomycin therapy.

Case 4.—A 32 year old man with subacute bacterial endocarditis started treatment on May 8, 1946 with a dosage of 3 Gm. streptomycin a day from Pfizer lot 461. Simultaneously he received penicillin 100,000 units every four hours. On May 23, 1946 a generalized cutaneous rash developed. On May 25 the administration of penicillin was discontinued and the type of streptomycin changed to Merck lot 398. Treatment was discontinued on May 28, 1946. On the same day the patient began to complain of dizziness. His first otologic examination was on May 29, 1946. He had moderate bilateral hyperostosis of the auditory canal, so irrigation was performed for five minutes with ice water through a ureteral catheter. There was no nystagmus. This procedure was repeated on Aug. 8 and 20, 1946 with the same results. His audiogram was normal. Subjectively his vertigo has shown a steady decrease. He is up and around at present, and this symptom is not incapacitating.

---

[7] Chas. Pfizer & Company, Inc.

CASE 5.—S. B., the first patient treated with streptomycin at Presbyterian Hospital, reported through the courtesy of Dr. Alvan Barach, was a man aged 38 with pulmonary tuberculosis. He was started on a streptomycin dosage of 250,000 units every four hours (Merck lot 280) on July 17, 1945. After four doses his temperature rose to 101 F., and during his daily trip to the bathroom he suddenly lost consciousness. This lasted only a few minutes, and he felt no ill effects the following day. Administration of the drug was discontinued, and three days later, on July 20, 1945 he was started on Merck lot 284 with the same dosage. During the next three days he experienced increasing generalized aching and joint pains. This became so severe that treatment was again discontinued on July 23, 1945. On July 25 the drug was resumed and a third lot, Merck 303, was used in the same dosage. There were no signs of toxicity until August 7, two weeks after the initiation of treatment. He began complaining of vertigo and impaired muscular coordination. On this account treatment was stopped Aug. 11, 1945. His vertigo showed a gradual steady decrease. On Jan. 21, 1946 a caloric test was performed which showed a lack of response to ice water instilled for five minutes bilaterally. On Sept. 3, 1946 there was no response to water at 30 and 44 C. instilled for 40 seconds bilaterally. At present vertigo has almost completely disappeared. He has not complained of impaired hearing. The results of audiograms at the time of the caloric tests are shown in table 4. At present there is no apparent hearing loss with normal conversation. An audiogram was not made before streptomycin therapy began.

TABLE 4.—*Audiograms in Case Five*

		128	256	512	1,024	2,048	4,096	8,192
Jan. 21	R	10	15	15	25	30	55	50
	L	10	10	15	35	35	75	55
Sept. 3	R	10	5	5	25	35	50	40
	L	10	5	5	35	45	55	50

CASE 6.—W. P., a patient in Babies Hospital reported through the courtesy of Dr. H. R. Craig, was a boy aged 5 with a diagnosis of tuberculous meningitis. On May 4, 1946 he was started on streptomycin therapy, 50,000 units given intrathecally twice a day. This was discontinued on May 25. On May 14 a spontaneous vertical nystagmus had been noted. On May 27 progressive bilateral loss of hearing was observed. From June 4 to 20, 1946 he received 160,000 units of the drug every three hours intramuscularly and 100,000 units a day intrathecally. On July 7, 1946 there was no nystagmus after irrigation with ice water bilaterally. It was believed that there was complete deafness at this time. On July 16, 1946 he was discharged from the hospital improved, and with a normal spinal fluid. On Sept. 1, 1946 he was readmitted because of signs of exacerbation of the meningitis. The deafness was still complete. On Sept. 5, 1946 he was started on a streptomycin dosage of 120,000 units every three hours given intramuscularly and 100,000 units a day intrathecally. He did not complain of vertigo but was still totally deaf. At the time of his death Dec. 1, 1946. The lot numbers of the drug used have not been identified.

COMMENT

We have observed several other cases of otic complications following streptomycin therapy through the courtesy of Dr. H. C. Hinshaw and Dr. H. A. Brown of the Mayo Clinic and Dr. Walsh McDermott of the New York Hospital. It is evident that a high incidence of vestibular disturbance and a sizeable number of cases of deafness, either transitory or permanent, will occur with the use of streptomycin of even the best current manufacture if large doses of the drug are given over prolonged periods.

As a rule the onset of otic symptoms, should they occur, is on the seventeenth to twentieth day if 3 Gm. of the drug is given per day.[8] On the other hand, we have seen 1 case in which otic symptoms started on the seventh day, and Brown and Hinshaw [4] reported a case in which they started on the eighty-eighth day. In 1 of our cases the symptoms started on the first day of a second course of treatments. Whether this was due to sensitization is a subject for speculation. It is hoped that it can be proved that the toxic symptoms are caused by impurities in the drug. To prove this all patients should have audiograms and quantitative caloric tests by the Fitzgerald, Cawthorne and Hallpike technic [6] before and after streptomycin therapy, and all manufacturer's names and lot numbers should be carefully recorded. The temporal bones of all patients who die after streptomycin therapy should be removed and sectioned.[9]

Fortunately the patient seems to recover from deafness in the majority of cases, and even if the caloric response remains negative the accessory balance mechanisms compensate marvelously for totally dead labyrinths, so that this need not be feared. In fact the vertigo usually lessens even if the therapy is continued in spite of it.[8]

The mechanism of the otic complications of streptomycin therapy is unclear. The cause could be either a labyrinthine or retrolabyrinthine lesion. Examination of pathologic material to date from the brains of dogs and human beings has failed to show any lesion attributable to streptomycin in the auditory tracts. Satisfactory temporal bone material is not yet available for study. It is noteworthy that most of the cases of deafness so far reported have been in patients with meningitis. In only 1 of our cases was the deafness in conjunction with tuberculous meningitis. Dr. McDermott's patients also did not have tuberculous meningitis. To be sure, deafness is not as a rule a permanent feature of this disease, but in its presence one can never be certain that supervening deafness is caused by streptomycin. This is also true of influenzal meningitis, of which we have seen 1 case with recovery,[4] total deafness and total loss of vestibular response.

Brown and Hinshaw [4] emphasize that in all their cases a low pitched tinnitus occurred and that the deafness was largely in the low frequency range. This has not been true with the cases which we have seen; in fact, 2 patients, cases 1 and 5, complained of high pitched tinnitus and they later had a greater degree of deafness for the high than for the low tones. We agree, however, that the occurrence of tinnitus may well be the sign of impending deafness. Since tinnitus is a subjective symptom, one must be careful not to induce it by suggestion.

SUMMARY

1. Eighty-one streptomycin-treated patients were examined for evidence of aural toxicity.

2. Two months after the cessation of therapy 3 of these patients showed an absence of vestibular response. During the third month after therapy 1 of these 3 has shown increasing recovery of response. All 3 complained spontaneously of dizziness during treatment. This symptom has decreased steadily and is at present not incapacitating. Except for 1 patient showing a probably unrelated high tone loss, the audiogram was normal in these 3 patients.

---

[8] McDermott, W.: Personal communication to the authors.

[9] If the bones are placed in 400 cc. of 20 per cent solution of formaldehyde for twenty-four hours and transferred to 400 cc. of fresh buffered 10 per cent solution of formaldehyde every day for four days, and are then shipped to the Department of Otolaryngology, College of Physicians and Surgeons, 630 West One Hundred and Sixty-Eighth Street, New York, with a complete history, a set of serial sections and a pathology report will be returned to the sender.

3. Another patient showed a severe loss of hearing two weeks after treatment. One month after treatment he had shown decided improvement in hearing. He had a normal vestibular response throughout.

4. Because of the possibility of complications, the indications for the use of streptomycin should be carefully considered in each case. However, when indicated the drug should not be withheld because of this danger. The occurrence of otic symptoms during streptomycin therapy should call for a reconsideration of the case before continuing the administration of the drug. If streptomycin therapy is continued, the drug with another manufacturer's lot number should be tried.

5. An audiogram and vestibular test should be performed before the initiation of streptomycin therapy.

6. The low tone and high tone losses here reported are probably not due to streptomycin, except in 2 cases (1 and 5). The low tone losses are probably due to outside interference. The losses in high-pitched tones relatively unimportant in the hearing of speech are the type commonly found in soldiers who have served in active combat.

INDUSTRIAL PHYSICAL EXAMINATIONS

Objectives and Methods

F. E. POOLE, M.D.
Glendale, Calif.

The industrial physical examination is a tool which when correctly used is an effective instrument for the proper placement of employees. Like all instruments, however, it has its limitations, and when improperly used may be ineffective or may even become a liability.

Workmen's compensation laws, holding employers responsible for the care of occupational injuries, chiefly were instrumental in the introduction of physical examinations in industry. This responsibility encouraged the attempt to weed out by examination all but the most physically fit workers, eliminating those with physical defects, who, it was thought, might have a higher accident frequency.

This method did not result in the desired lessening of industrial accidents; it was found that freedom from physical defect is not necessarily synonymous with freedom from accident proneness. Physical standards were placed so high in many instances, however, that workers physically substandard in some detail, yet perfectly capable of satisfactory employment in many occupations, were eliminated from the work force.

The use of industrial examinations as a bar to employment instead of as an aid to maximum utilization of workers naturally resulted in resistance on the part of employees to examining programs. This resistance is still found in many industries where pre-employment examinations are prohibited in the union contract. It undoubtedly results from the lack of understanding of the true objectives of industrial examinations or from suspicion of the motives of the employer in their use.

For these reasons the industrial physician not only must understand the objectives of industrial examining but must continually bear in mind his professional relationship both to the worker and to the employer. He must strive always to be impartial, to base his opinions on facts and to be uninfluenced by the wishes of either the worker or the employer.

Generally, the weeding-out concept of industrial examining has given way to a sounder policy: (1) use of the examination program for the proper placement of workers, especially those having defects which in some way limit their capacities, and (2) maintenance of the health of employees.

In the use of the examination as a placement aid, the labor union and the industrial physician share a common point of view; it is the aim of both to attain maximum utilization and protection of the worker. Labor unions whose leadership understands this principle now insist on physical examinations as a part of the advanced employee relations program.

The industrial physician should understand the importance of an advanced industrial medical program in the fulfilment of the important objective of full employment and must be prepared to render constructive service. It is my purpose to discuss the proper objectives of industrial physical examining and to examine methods by which these objectives may be most effectively attained.

The pre-employment physical examination is most generally thought of in a discussion of industrial examinations, but the complete examining program required by modern industry is far more comprehensive and may be divided into these five classes: (1) pre-employment, (2) occupational hazard, (3) maintenance of health, (4) management, and (5) special examinations.

PRE-EMPLOYMENT EXAMINATIONS

The primary purpose of the pre-employment examination is to select for the employer workers with the necessary skills and capacities to perform the work which he must have done, and to permit the worker to perform all types of work for which he is capable. To achieve this purpose, the examination must be designed to accomplish these things: (1) determination of those workers who are physically unfit for work and who must be rejected; (2) acceptance of workers who are physically capable of performing without limitation the work to be done, and (3) classification of workers with physical defects or disabilities so that they may be permitted to perform work which they are capable of doing while at the same time they are protected from the particular work which would be hazardous to them or in which they would constitute a hazard to others.

Basically, this examination requires evaluation of the worker only in relation to his work requirements and consequently need only be sufficiently detailed to permit the examining physician to formulate a reasonable opinion, based on the worker's medical history and the findings of the examination. The nature of the work determines the extent of the examination; where light, nonhazardous work only is required, a cursory examination might suffice; in industries where heavy labor or high physical capacities are required or where hazards are great, a more thorough examination is essential:

Generally, it is sufficient to determine that the worker has normal vision, hearing and use of the extremities and is free from communicable disease, serious disease of the heart or the lungs, hernia, deformity or any other condition which would be aggravated by employment.

Depending on the needs of the specific industrial plant, this basic examination may be expanded in many ways; for example, in a plant where high noise levels are encountered, closer attention must be given the ears, while in a factory where much heavy lifting is done, special attention must be paid to the body structure, back and hernias.

Read before the Section on Preventive and Industrial Medicine and Public Health at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

I have not mentioned the consideration of psychologic factors in the examination. There is now much discussion regarding personality testing as a means of proper placement. This is a special field that requires expert evaluation of the methods in use and cannot be delegated to a few minutes of the time of the physician who makes the pre-employment examination.

When workers who are being examined exhibit definite signs of mental derangement, the physician cannot ignore these signs. If the worker does not show obvious signs of derangement, it is my opinion that the examiner should not attempt psychoanalysis, for which he generally is not thoroughly qualified. I believe that the front door to employment should be held open to all but the obviously mentally deranged, but that the physician should keep a watchful eye on the "back door"—emotional and adjustment problems which arise within the plant. When an employee demonstrates that he is maladjusted to his job or environment, the physician can assist in re-evaluation of the worker. When psychologic factors are responsible, the problem is one for the skilled clinician, who should be fully acquainted with the worker's medical history and industrial environment.

Workers accepted for employment are further evaluated by the physician, and those found to have some defect or deformity must be afforded protection.

Many systems have been developed to facilitate the use of these physically substandard workers, and refinements of these systems are being made constantly. The requirements of the successful system are: (1) simplicity, (2) ready understandability and acceptance by lay supervision and (3) minimal limitation of the worker.

The hallmark of the successful placement system, regardless of the method used, is its ease of application and maximum freedom for the employee except in the performance of work which would be hazardous to him.

These opinions have been formed over a period of years, during which time these principles have been used in the examination of more than 300,000 employees, of whom more than 15,000 physically substandard workers were successfully placed. This experience taught me, however, that the cursory examination does not give the employer the maximum benefit from the examining program.

The slight additional cost and time required for performance of the complete examination is fully warranted by its greater value. In the course of a worker's employment there are many conditions which may be of considerable importance but which can be discovered only by the use of such aids to examination as the urinalysis, the roentgenogram of the chest and the Wassermann test. Other criteria which are helpful and which may be noted in little additional time are the presence of abnormal conditions of the nose and throat, oral hygiene, weight record, pulse rate, temperature, blood pressure and deformities, including adequate description of their extent and limiting action.

In my opinion the urinalysis is an indispensable part of a desirable pre-employment examination, if for no other reason than as a means of detecting diabetes.

A general physical examination cannot be said to be complete unless a roentgenogram of the chest has been made, for minimal pulmonary lesions cannot be detected by the usual examination procedures. It is important, then, to include this laboratory aid in a complete industrial examination, especially for workers in occupations in which dusts or fumes are encountered, both because of the possibility of aggravation of an existing condition and because of the tendency of workers to believe that pulmonary conditions result from exposure to dust or fumes.

The percentage of pathologic conditions discovered in routine roentgenograms of the chest is small but sufficiently significant to warrant their routine use, especially since the small film equipment has reduced the cost to a few cents.

My experience during 1945, covering more than 15,000 routine 4 by 5 inch (10.2 by 12.7 cm.) roentgenograms of the chest, revealed 5.3 per cent significant pulmonary and 1.4 per cent significant cardiac pathologic conditions. Of the pulmonary pathologic conditions, approximately one half (2.7 per cent of all cases) were tuberculous. In two thirds of these (1.9 per cent of all cases) the tuberculosis was considered active: minimal, moderately advanced or far advanced. Stated as a percentage figure this does not seem large, but when one considers that this represents 288 cases of tuberculosis that warranted further clinical study and treatment, the problem assumes real significance.

I have had some experience with the chest roentgenologic surveys of public agencies and believe that until industry in general is better prepared to do this work such surveys are valuable for case finding; however, they should be better coordinated with the medical departments of industry, and the physician in industry should be given the findings of such surveys.

The Wassermann examination, in my opinion, is the least important laboratory test from the strictly industrial point of view. I do feel, however, that industry should cooperate as far as possible with the public health agencies in case finding, provided that these agencies are prepared to carry out a complete and effective program.

The program of physical evaluation is a part of the industrial placement program, and the examining physician, in fact, is a key member of the team for assignment of manpower. As such, his efforts should supplement and support the efforts of the other placement specialists—the interviewer, the job counsellor, the personnel adviser and the plant supervisor. He should use this opportunity to acquaint the worker with his physical status and to stimulate in him the responsibility for the maintenance of health.

Medical records obtained by examination, although confidential in nature, are no more privileged than other records of workers, and placement officials have a responsibility as great as that of the physician for proper regard for such information. The physician has no reason to object to discussion of medical information with interviewers or placement personnel when such discussion will increase the usefulness of the worker or contribute to his efficiency and safety on the job.

For physicians who inherently object to revealing medical information to lay persons, it might be well to point out that the usual physician-patient relationship is not established by the pre-employment examination, because the applicant does not choose the physician but merely submits to examination as a condition for obtaining employment. Because the usual professional relationship is lacking, medical records obtained by the examination are not privileged to the physician alone but become a part of the employer's confidential files and available to those authorized by the company to use them. Such authorization should be given to as few persons as possible, and the records should be kept in the medical department under the control of a physician, nurse or competent medical clerk.

Interpretation of physical factors or laboratory reports should be done only by a physician and should never be delegated to an interviewer or employment manager without medical training. It is impossible for a layman to translate diagnoses or laboratory reports into terms of ability to work. I have seen injustices result from such practices.

In a company employing several thousand workers in scattered locations, it was the practice to have the physical examination done close to the place of work. The completed forms, giving the detailed findings but not their interpretation, were forwarded by the physicians to the employment manager in another city, where the decision regarding employability was made. In one instance a person in a responsible position was refused employment after the company had financed the moving of his family across the United States because in the report of the physical examination there was a statement that his urine contained "sugar 2+." To the employment manager this statement meant diabetes, and diabetes meant unemployability. Both of these assumptions were incorrect.

Information transmitted to lay supervisory personnel or to personnel records should be for the one purpose of classifying the employee's ability to work, and should never reveal specific diagnoses. Classifications should be meaningful, however. Such terms as excellent, fair or poor are too general and are relatively useless. I can recommend the following classification system:

Group 1: "Unlimited." Acceptable for any type of work.

Group 2: "Limited." If a physical handicap or defect is serious enough to limit a person's working ability, constitute a hazard at work, or be seriously aggravated by some type of work, such a person will be classified as limited and placed in one or more of the following classes, which are intended to describe in lay terms the type of work which he should avoid. The reason for the limitation is a confidential matter and of no practical interest to the supervisor as long as he is aware of the type of work prohibited.

Class I—No hazardous machinery
Class II—No heavy lifting
Class III—Work at ground level only
Class IV—Avoid contact with or exposure to [agent or substance to be specified]
Class V—No extensive walking or standing
Class VI—Miscellaneous (this may be expanded to other classes as needed by the type of industry)

Group 3: "Severe Handicaps" involving special placement problems (as the blind). Transfers are not to be made without approval of the Medical Department.

Group 4: "Temporarily Unable to Work" because of a transitory condition or a correctible defect.

Group 5: "Rejection." Serious physical or mental disease or disability rendering the persons unfit for any work.

In addition to serving as a record on which the examining physician bases his recommendations for placement, the medical report is of great value to the employer as a record of the worker's physical condition at the time of employment. The worker's physical condition is subject to change with time, and in the older age groups particularly there is an increasing tendency on the part of employees to attribute progressive physical decline to occupational causes. In case of claim of alleged occupational injury, the examination record is of considerable medicolegal value, provided—and this point cannot be stressed too strongly—the record is fully and properly detailed. If it is inadequate or incomplete, it may prove a liability to the employer. The moral here is that industry can gain much from pre-employment examining, but if it is done, it must be done right; otherwise it had best be left entirely undone.

OCCUPATIONAL HAZARD EXAMINATIONS

The prevention of occupational disease is the primary objective of the occupational hazard examination. The need for this type of examination is dictated by hazards to which the worker is exposed during employment.

To determine the occupational hazard examinations required in any industry and the frequency with which workers must be examined, it is first necessary to determine the nature of the hazards involved. This is accomplished by a survey of the plant, its processes, facilities, working conditions and environment. Such a survey can be made only by an experienced industrial hygienist.

In addition to determining the conditions and processes which present occupational hazards, the hygienist is qualified to recommend safety devices and control equipment to minimize such hazards. He is best qualified to select groups of employees requiring periodic examinations, to maintain current lists of exposed workers and to establish control of new groups when processes are changed, and he, together with the plant physician, must decide the type and frequency of the examinations needed.

I wish to stress the union of the industrial hygiene surveys and the examinations as a combined control function. It is well to know that the dust counts in the sandblasting area or the lead concentrations in the air in the foundry are within normal limits, but it is equally important to know that the roentgenograms of the chest and the blood lead determinations of the workers exposed in these areas are normal. The clinical tests act as a double check on the control measures and serve to detect those with abnormal sensitivity or susceptibility.

In this type of examination it is not always necessary to do a complete physical examination, but if it can be combined with the annual health audit examination discussed later, so much the better.

Some occupational hazard examinations should be done more frequently than annually; for example, (1) audiograms to detect loss of hearing in high noise level areas should be done within thirty days after initial exposure and repeated at six month intervals; (2) complete blood counts should be done at three month intervals on employees exposed to certain aromatic solvent vapors; (3) blood lead determinations should be done at six month intervals in lead exposures; (4) roentgenograms of the chest should be done at six to twelve month intervals in dusty occupations, depending on the intensity and the duration of the exposure; (5) Geiger-Muller counts are indicated at two to six month intervals for workers exposed to radioactive material, and (6) nasal examination is required at three month intervals in chromic acid fume exposures.

It is our opinion that education of the employee is an important part of the program for occupational disease control. Employees should not be kept in ignorance of the hazards involved in their work because of the employer's fear that this knowledge might induce them to bring unjust claims for imagined injury. It has been our experience that employee morale is improved when the workers are aware of the protection afforded by the continuing plant surveys and periodic examinations.

To describe in any detail the countless occupational hazards encountered in American industry and the necessary clinical and laboratory examinations required to protect workers is not possible in this paper, but the principles involved may be illustrated.

A new bullet-proofing process for gas tanks was introduced, with the assurance of the manufacturer who supplied one of the solvents that it was nontoxic under the conditions of its use. Within a few days several workers became nauseated from the fumes, and a work stoppage was threatened because of the increasing number who became ill. Investigation by the industrial hygienist who had previously been uninformed of this new process revealed the solvent to contain benzene. Fortunately, the early complaints and immediate analysis by the hygienist prevented fatalities which could have been expected in view of the well known cumulative effect and high mortality rate of exposure to benzene.

This emphasizes the necessity for the approval of all new processes by the industrial hygienist before their use, particularly since in this case a nontoxic substitute was readily available.

Recently a new tank-sealing operation was installed, in which monochlorobenzene was used. An unpleasant odor was associated with the process. Although frequent analyses of the air proved the safety and ventilating equipment adequate to keep the fumes within safe concentrations, a great deal of apprehension was present on the part of the employees, and when, coincidentally, one employee died of a heart attack and another became ill with gallstones, the entire department was reluctant to continue work. The union demanded monthly examinations of all employees in the department. This demand was excessive, considering the nature of the hazards and the excellent controls.

Examinations at six month intervals had been planned. It was agreed to compromise by examining a portion of the exposed workers every month, thereby affording a continuous sampling check and assuring all workers that they would be checked at six month intervals.

I point out that this process was approved by the hygienist and adequately controlled at the time of installation. This fact, however, did not prevent mass fear from developing and emphasizes the necessity of educating employees regarding the adequacy of measures taken for their protection.

HEALTH MAINTENANCE EXAMINATIONS

Man power is industry's most important resource. This fact, long ignored, has been proved recently by the wartime shortages in man power, and from this experience industry has learned that as it conserves its material resources, it must now begin to conserve its man power resources.

The keystone of the program of man power conservation is the annual health maintenance audit, the purpose of which is to detect the onset of disabling disease and disability, permitting correction in the early stages and prolonging the useful life expectancy of workers.

Unlike the pre-employment examination, which is a simple process of selection aimed at effecting proper placement, the "health audit" comprises a total evaluation for the worker's physical condition, and consequently a thorough general examination is indicated. This examination must be supplemented by necessary laboratory aids, including urinalysis, blood count and hemoglobin determination and a roentgenogram of the chest.

Since the unqualified support of the worker is necessary for the success of the program of man power conservation, the professional relationship between physician and worker assumes greater importance than in the pre-employment examination. In the latter, as previously pointed out, the physician acts as a representative of the employer and exerts an influence on the worker's ability to secure employment; consequently, the only part of the traditional physician-patient relationship which exists in the pre-employment examination is the worker's privilege of knowing of any condition which the physician detects.

In the program of health maintenance the physician is *the friendly counsellor of the worker, seeking to assist* him in prolonging his useful life expectancy, and a limited physician-patient relationship is created. This differs from the relationship of the private physician with his patient in that the examining physician, having found a condition requiring treatment, refers the worker to his private physician for further diagnosis and treatment. He does not generally undertake the treatment of employees.

The necessary cooperation of the worker is obtained for the program when he fully understands his relationship with the physician, the purpose of the examination and the fact that his employment status will not be affected by the conditions revealed by the examination—unless such change will be to his benefit. This point is fundamental, and its principle must be zealously guarded by the physician. Any suspicion on the part of workers that the examination may be used by the employer to eliminate from the working force those who show signs of physical deterioration will result in immediate reaction against the entire program and will doom it to failure. The physician is the key factor in preventing corruption of this principle. He must treat all information he receives through the examination in professional confidence and must never disclose privileged information to the employer or supervisory personnel without the consent of the worker.

When the program for the conservation of man power is properly conceived and executed, it produces significant benefits for both employer and workers. The Metropolitan Life Insurance Company, for example, has given annual health audits to its employees for many years and has determined scientifically that the average useful life expectancy of workers is prolonged by more than 24 per cent through this program for the protection of health. The benefits of this longer earning life are readily understandable as they affect the worker, but have only recently been appreciated by industry. In this age of specialization, however, when the period required to acquire necessary occupational skills is being steadily lengthened, the savings to the employer in replacement cost of skilled workers under a program for the protection of health become obvious.

I might cite many examples of the early detection of disease such as tuberculosis and diabetes in workers who had no complaints, as well as cases in which it was necessary to prove to workers with functional complaints that no organic pathologic conditions existed. This phase is as important as the detection of real disease, for functional conditions brought on by the nervous tensions of work and maladjustment can be as disabling as organic disease.

This is well illustrated by the case of a supervisor of inspection who at the time of his examination complained of indigestion, pain about the heart, excessive fatigue, poor sleep and loss of weight. He was certain that he had some serious condition, such as cancer of the stomach. It was learned that he was intense in his work, put in long hours and worried greatly over the possibility of errors in his job and the resulting consequences to the airplane. He had similar but less severe symptoms the year before, but they had cleared up during the course of recuperation from a minor operation.

Physical examination revealed no evidence of organic disease, and my colleagues and I were able to convince him of this through the use of laboratory tests. He was, however, suffering from a severe state of chronic fatigue, and there was no doubt that his condition was in part related to his inability to remain the master of his job. A leave of absence was arranged, and a program was outlined for him to follow. On his return to work a new assignment was arranged, which carried less responsibility. He has been satisfactorily adjusted and productive in his new job for over a year.

MANAGEMENT EXAMINATIONS

The one resource without which industry cannot operate successfully is management and supervisory personnel, and it is the purpose of the program of examination for executives to conserve this all-important personnel. Executives are most capable of understanding the purposes of the program having to do with health and are best situated to appreciate the findings of the examination and to obtain necessary treatment.

The business of management has its peculiar occupational hazards, and these are related mainly to the mental and nervous processes rather than to the physical. The task of guiding industry in these complicated modern times subjects the executive to continuous nervous and emotional stimuli, which, acting through the autonomic nervous system, frequently effect functional alterations with accompanying disturbing symptoms. These are usually associated with the gastrointestinal or cardiorespiratory system.

It is the role of the physician to determine whether these symptoms result from organic pathologic conditions or functional disorder. This requires a thorough, complete examination, including urinalysis, blood count, serologic test, electrocardiogram and roentgenograms of the chest and the teeth.

The person who experiences symptoms of a functional nature must actually be convinced by being confronted with positive evidence of the absence of organic disease. It may be necessary, therefore, to prove that a disorder which he believes to be pathologic results from a functional cause. Such proof to support the clinical observations is obtainable through the use of many laboratory aids. The promiscuous use of laboratory tests is not advocated.

In this examination the highest form of physician-patient relationship must be developed. The industrial physician becomes the confidant of the executive and must be available to him for consultation and reassurance. Since the physician is familiar with the executive's daily industrial problems, he is better able to counsel him.

The invaluable assistance which a physician may render not only to the executive but also to the company is illustrated by the case of an experienced executive in whom, in the midst of an extended period of negotiations under adverse conditions, distressing cardiac and gastrointestinal symptoms developed. His annual examination, which had been done a few months previously, was immediately supplemented by gastrointestinal roentgenograms and another electrocardiogram. A diagnosis of duodenal ulcer and frequent extrasystoles was established. He was placed on an appropriate treatment regimen and his activities were reorganized. Immediate improvement was noted, and he was able to continue the assignment to its completion. He has continued his treatment regimen, and recent rechecks of the laboratory tests indicate complete recovery.

This is an example of the combination of functional and early pathologic conditions. The ulcer was readily treated by diet, the cardiac arrhythmia soon subsided under the reassurance and the lessening of the load of work, and the executive was enabled to carry on without loss of time.

SPECIAL EXAMINATIONS

An inestimable number of special examinations are required by industry in general to cope with specialized problems not falling within the scope of the four classifications previously discussed. I shall confine my discussion of these to (1) examinations required by those workers whose employment is contingent on their maintaining a high level of physical fitness and (2) examinations which are used for continuing placement of the worker after employment and which feature in the program of employee relations.

Among the occupational groups where top physical condition is a prerequisite for employment are airplane test pilots, marine divers, locomotive engineers, bus and truck drivers, especially long distance drivers, professional athletes and others. Our experience has been with test pilots, and as their problems are generally indicative of the nature of special physical requirements for other groups also, a discussion of special examinations required for pilots may be illustrative.

The test pilot has a tremendous responsibility to carry under trying conditions. He is charged with testing new designs for airplanes or newly manufactured models. To complete his assignment he must exceed all the performances required of the particular airplane in its regular use; consequently, his physical strain is greater than that experienced by any other pilot. Further, since this strain results from high speeds, high altitudes, extreme concentration and nervous tension, psychomotor and psychologic conditions are important factors.

In addition to peak physical fitness, the pilot must have perfect vision, nervous balance and physical endurance, and his examination must be specially designed to test these factors to the limit.

The importance of thorough examination is pointed out by the case of a pilot with exceptional ability and experience who casually complained of a symptom of pain in an extremity. Thorough investigation, including neurologic examination, pointed to the probability of a serious nervous system lesion. Although he was scheduled for an important flight operation, the pilot was grounded, and further clinical investigation was undertaken. The decision to ground him was fortunate, for during the period he would have been flying his condition reached a climax which would have produced disastrous consequences. Without a thorough examination it is probable that a minor complaint of this nature might have been overlooked.

Physical fitness must be coupled with satisfactory mental adjustment for safe operation in flying. Mental maladjustment is just as damaging to a pilot's efficiency as physical deterioration, and the case of a senior pilot illustrates this point. He requested a leave of absence based on a complaint of excessive fatigue following each trip and the inability to become rested before the next trip. He had frequent headaches, felt irritable at times and was inclined to worry unduly over minor details. He attributed his symptoms to the fact that he had not had a vacation for over a year and so reasoned that he should have three months off in order to rest. He started flying when he was 16 years old, had a commercial job at 20 and had flown all sorts of airplanes under the most difficult conditions. He looked back on these experiences as having been associated with a great deal of luck; now, with modern equipment he found himself worrying over minor mechanical problems. He had never had an accident in his fourteen thousand hours but admitted that if any one asked him about the safety of air travel, he could not be convincing because he knew too many things that could go wrong.

His physical examinations had never revealed any abnormality, and the result of the reexamination was the same. The interview developed the fact that he had started flying so early in life that he had not completed more than a high school education and that he consequently felt inferior to the many college graduates with whom he was competing. He had come to the feeling that experience no longer compensated for his lack of additional formal education. He was not desirous of advancement to larger equipment.

This problem centered around a feeling of inadequacy in competition with more formally educated men and the development of a state of anxiety which had become so deeply fixed that it was doubtful whether he could satisfactorily be readjusted to his job. Following his leave of absence he returned to work for a temporary period but soon had a recurrence of his previous symptoms and had to make a readjustment into a new occupation.

This emphasizes the necessity of extending the examination beyond the purely physical to include personality evaluation in order to arrive at a satisfactory solution of the individual problem.

The industrial physician's responsibility for the correct placement of employees is not terminated at the time of hire, but continues throughout the worker's employment. When evidence is found that the worker has become maladjusted in his occupation, it is the physician's responsibility to reevaluate his physical capacities and mental adjustments to determine what occupational changes, if any, are necessary to establish readjustment. Instances of maladjustment are usually brought to light by plant supervision, and the physician serves as an adviser to the supervisor in this type of examination. His recommendations should assist the supervisor in effecting a better placement for the employee when this is found necessary. Since the worker's physical condition is constantly changing and may be deteriorating steadily, replacement is unavoidable in many cases and should be guided by the physician.

Employees maladjusted to their work for physical, nervous or mental reasons fall into two groups: (1) those who seek to minimize their limitations and seek greater occupational opportunities than they are capable of performing, and (2) those who seek to obtain special privileges, lighter work and perferred shifts by taking maximum advantage of their difficulties, real or imagined.

With the first group the industrial physician must point out to the worker the nature of his limitation and its effect on his physical capacity. He must also inform him of the requirements of the job he desires and the possible results if he were to perform the work from which he has been prohibited.

With the privilege-seeking group the physician's task is more difficult. Having determined their real physical capacity, he is faced with the necessity of convincing them that they are physically capable of performing the work requested of them—and of securing their agreement to do so. Since the malingerer, the loafer and the socially insecure fall into this group, the physician's task is a difficult one, and it is unfortunate that the percentage of successful replacements is low.

Minor physical complaints are frequently used as subterfuges to obtain a change of jobs desired by the worker for other reasons. An example is the case of a young male employee who requested a change from the evening to the day shift on the basis of the aggravation by the night air of an existing bronchitis and sinus infection. The working conditions on this shift were not such as ordinarily to aggravate such a condition; therefore his request was denied. He used every pressure to try to force the change on the basis of his health. It was discovered that his real reason for desiring the change was to allow him to continue playing night baseball, which gave him a much greater exposure to night air than did work within the plant.

When it is impossible to satisfy workers in either of the two groups mentioned, a union grievance may result and the problem becomes one of employee relations. In the solution of this problem, the company must depend in large part on the wisdom of the physician. If he has used good judgment and has carefully documented his observations, they carry great weight in the employer's defense against the worker's grievance.

Employees returning to work after absence due to illness or injury should be reevaluated before being allowed to return to work, as it is obvious that sickness or injury may alter an employee's physical capacity for work either temporarily or permanently. The industrial physician must be sure in setting up a procedure to screen employees returning to work after illness or injury that the procedure is practical, both from the medical and from the supervisor's point of view.

From the medical point of view, these examinations should not be stereotyped but should be suited to every individual case. It affords the opportunity to reexamine employees who have not been examined for a year or more and to reevaluate by careful physical appraisal the working ability of those who have had a serious injury, illness or operation. Opinions expressed by the employee's private physician should be carefully considered by the industrial physician, but the latter is usually better able to decide whether or not the employee can return to his regular job, because of his knowledge of the working conditions within the plant.

The industrial physician is not interested in seeing personally all employees who have been absent with minor illnesses for three or four days. If the procedure requires every one who has been absent because of illness or injury for three days or more to clear through the Medical Department before returning to work, the majority of the screening must then be delegated to nurses. I have had experience with extremely rigid medical controls to the point of having every absence of one day or more checked through the medical department. In theory, such a system had many technical advantages. However, the inevitable delays in getting employees to their places of work and arbitrary assignment of a function to the medical department which was largely a function of supervision led to poor cooperation between the medical department and the supervisory personnel.

The policy was changed to place the primary responsibility for releasing an employee to work on his immediate supervisor. In the use of this discretionary power the supervisor was given every aid of the medical department. The relationship between the medical department and the supervisory personnel was greatly improved by this change of emphasis from one of a checking function to one of a service function.

Management in small plants is not generally aware of the need for good medical service, and it is therefore the responsibility of the profession not only to provide good industrial medicine but to undertake an educational program [illegible] efits resulting therefrom. Further, [illegible] must assist management in obtaining medical service at a cost compatible with the profits of small industry. This requires the grouping of small plants into units which may be economically serviced by the profession. The industrial physicians must ceaselessly strive to extend the benefits of the profession to all industry.

ABSTRACT OF DISCUSSION

Dr. R. R. Beard, San Francisco: This paper presents a valuable formulation of facts and opinions which I know to be based on sound experience concerning industrial medical examinations. If I understand Dr. Poole correctly, I disagree with the concept expressed in his statement that the usual physician-patient relationship cannot exist at preplacement examination. That is only partially true. If the preplacement examination is done in an atmosphere of friendly interest, especially with time being taken firmly to establish in the worker's mind the idea that medical examination of his fitness for the contemplated job is for his own advantage, then two purposes at least will be served: first, one will get more complete and more accurate information on which to base one's decision as to placement; second, it will establish an effective relationship for the starting of the health maintenance or constructive health program. It is possible to keep preplacement medical examination records confidential, and I think it is essential. Except where an industrial accident compensation claim is involved, it is our practice to withhold the diagnoses from management. We encourage our employees to talk over their whole medical situation with their supervisors, but if they don't want to do so we keep the diagnosis to ourselves, and what we give to management is a clear statement of the limitations of activity imposed on the individual by the abnormalities which we find, and also the outstanding strengths of the individual. The responsibility for informing employees of abnormalities discovered should not be limited to major defects. The most effective health education is conducted on an individual basis, and the occasion of a medical examination offers an excellent opportunity to give good instruction. There is a challenge to the physician in each preplacement examination, for he is serving not only to find things that will limit the activities of the new employee but also to find ways in which that individual can be bettered. The common acceptance of a twelve months interval for reexamination seems to me to have little objective basis. We may benefit by employing knowledge gained from the school health people in this respect. It has been found there that it is more useful if the interval between examinations is lengthened and a more thorough examination is done at each. If one can concentrate on the individuals who show special need for surveillance at the original examinations or because of excessive absenteeism or advance in age, this can help to maintain the interest of the examiner in doing the work. If he is doing something more than just a routine examination but is looking for something special, he will get more satisfaction from it.

ETHER AND HUMBUG

EVARTS A. GRAHAM, M.D.
St. Louis

It is a great honor to be asked to participate in this centennial celebration of the first public use of ether anesthesia under the auspices of this great medical school and the internationally famous Massachusetts General Hospital, an institution which, in addition to its pioneer use of ether, has to its credit the revelation of the true nature of appendicitis and acute pancreatitis by the great Fitz, as well as many other important discoveries. I accepted the invitation of Dr. Means and Dr. Churchill with great humility and with doubt that I am qualified to do proper justice to the occasion.

The simple remark of Dr. Warren at the finish of the successful demonstration, "Gentlemen, this is no humbug," has always interested me. Its simplicity and brevity suggest a deep and awe-inspiring effect on his emotions, as if he could think of no adequate words with which to express his feeling. Doubtless he could not, and his intense emotional reaction would indicate that he fully realized that the key had been found which would open the door to future developments which could only be faintly seen from his vantage point. Perhaps also he had a sufficiently prophetic vision to see that in time there would be an annual celebration of the event at which a speaker would be invited who would stimulate or even bore his audience by an address which would be much too long and might even contain some humbug. But why did he think it necessary to state that the demonstration was no humbug? If he had been speaking one hundred years later he might have said "Gentlemen, this is no baloney." For the word "humbug" at the time was considered so slangy that, according to Mencken,[1] when William Cullen Bryant became editor of the New York *Evening Post* he refused to permit its use in that newspaper.

We of a later age whose privilege it has been to see medicine established on a firm scientific basis can scarcely appreciate its state at the time at which Morton and Warren conducted their successful demonstration of the use of ether anesthesia. One wonders how much humbug the old Egyptian mummy present in the oper-

---

From the Department of Surgery, Washington University School of Medicine and Barnes Hospital.

Read at Sanders Theater, Cambridge, Mass., at exercises held at the Massachusetts General Hospital in commemoration of the centenary of the first public administration of ether anesthesia, Oct. 16, 1946.

[1] Mencken, H. L.: The American Language, New York, Alfred Knopf, 1945, supp. 1, p. 122.

ating room on the occasion must have heard in his corner. If it could have had any critical judgment and the power of speech it might have raised its voice to say that in its own last illness, thousands of years ago, it had been the victim of medical humbug and that it had heard plenty of humbug addressed to the students of Harvard Medical School in the same room which was about equally unscientific to the medical humbug of a thousand or more years ago.

In 1846 homeopathy was rampant, and so-called regular medicine had just emerged from the domination of the systematists. Those who have recently received their M.D. degrees perhaps do not even know what is meant by the term "systematists." Well, these were zealots who attempted to place all medical symptoms and diseases into simplified systems. The most ardent systematist of his day in the United States was Benjamin Rush of Philadelphia, who was also generally admitted by his contemporaries to be the most outstanding American physician of his time. In 1796 in a lecture given to students at the University of Pennsylvania and subsequently printed and published in his "Lectures on the Practice of Physic" he made the statement, according to Shryock,[2] "I have formerly said that there was but one fever in the world. Be not startled, Gentlemen, follow me and I will say there is but one disease in the world. The proximate cause of disease is irregular convulsive or wrong action in the system affected. This, Gentlemen, is a concise view of my theory of diseases."

Could anybody today imagine any more humbug than that? Yet that statement came from the lips of the most prominent physician in the United States at the time, one who Lettsom of England and Zimmermann of Germany said after his death should be immortalized. Speaking now to a New England audience I may say that it is to the credit of Elisha Bartlett, a New Englander, that he detected the humbug in Rush's writings and, again according to Shryock,[3] in 1843, three years before the event which we are celebrating, had this to say about the opinions of Rush, the great systematist: "It may be safely said that in the whole vast compass of medical literature there cannot be found an equal number of pages containing a greater amount and variety of utter nonsense and unqualified absurdity." Too bad Elisha Bartlett is not alive today to express his views of the writings of another New Englander, Mary Baker G. Eddy!

Of course in 1846 there was no surgery in the modern sense. In fact there were no surgeons as we understand them today. No specialization in medical practice had occurred, and every doctor was a general practitioner. Even as late as 1880 when the American Surgical Association was founded by Gross the original members were all general practitioners. In 1846 the operations that were performed were mostly on the extremities in addition to the removal of bladder stones. The abdominal and other body cavities had been rarely invaded. Speed was considered to be one of the most important factors in the success of an operation, chiefly because of the absence of satisfactory anesthesia. The best surgeons performed a thigh amputation in about three minutes, and Cheselden of London is reputed to have completed an operation for removal of a bladder stone in fifty-four seconds. It is true that in a few cases the operation of ovariotomy for ovarian cyst, initiated by McDowell of Danville, Ky., in 1809, had been performed successfully, but operations within the abdominal and other body cavities were extremely rare and still more rarely successful.

DRAWBACKS TO PROGRESS OF SURGERY

What was needed to advance surgery to make it safe and practical were first of all a more scientific attitude toward medicine as a whole, with the elimination of the humbug, and more specifically these three developments: a satisfactory method of removing pain (surgical anesthesia), the control of infection and the satisfactory prevention and treatment of surgical shock.

When one contemplates the horror attendant on an operation before Morton's time one is compelled to wonder how any one with even ordinary sensibilities could have undertaken to practice the art of surgery. The agonizing pain, the inevitable infection of the wound and the strong probability of the death of the patient were features which would not be likely to attract sensitive men to this profession. Yet we know that many who did practice surgery were sympathetic. In the case records and notes of operations performed about the year 1800 in the New York Hospital, edited by Pool and McGowan[4] a few years ago, there are frequent comments on "the fortitude evinced while under the knife." Rarely if ever nowadays would one find a note in a patient's chart commenting on how well he withstood pain. Are we perhaps less sympathetic because we are supplied with a large armamentarium of pain-killing drugs? Dr. John Brown's "Rab and His Friends," published in 1859, with which doubtless many of you are familiar, portrays an exceedingly sympathetic understanding of the horror and anguish associated with an operation. Again, the kindly sensitive face of Lord Lister bespeaks only the greatest sympathy.

The abolition of pain during an operation through the discovery of the use of ether at once removed one of the three obstacles to the development of surgery. To the layman this important discovery usually implies only that now the patient could undergo an operation without the pain which formerly had to be endured. Actually, however, as with most fundamental discoveries, the results were much more far reaching. Speed no longer was the important factor. Slapdash surgery was supplanted by slower but more careful work. Again, the muscles of the patient were relaxed and there was no struggling. Many modern operations could not be performed without the relaxation of the patient, and in all operations it is desirable that there should be no struggling. But aside from the beneficial effect on the human patient the discovery of anesthesia made it possible to operate on animals without pain. As a result, therefore, of experimental operations painlessly performed on animals a tremendous amount of knowledge was acquired which not only advanced the art of surgery but affected the whole realm of medicine. The functions of organs could now be studied by noting the effects of their removal. For example, how could one suppose that the pancreas was concerned in the use of sugar except by the fact that its removal immediately resulted in the condition of diabetes? Various operations on the stomach and intestines of animals taught the physiologists much about the processes of digestion in addition to paving the way for the surgeons to apply some of those operations to man for curative purposes. Indeed, practically all of our fundamental knowledge of the functions of our various organs has been derived from experimental operations on animals, and most of that knowledge has been acquired since it has been possible to use general anesthesia for the experiments. The development of the scientific basis of medicine, therefore, has depended to a considerable degree on the existence of a method of anesthetizing experimental animals. Dr. Warren might have gone further and said "Gentlemen, this is a severe blow to humbug."

---

[2] Shryock, R. H.: The Development of Modern Medicine, Philadelphia, University of Pennsylvania Press, 1936, p. 1.

[3] Shryock: The Development of Modern Medicine, p. 2.

[4] Pool, E. H., and McGowan, F. J.: Surgery at the New York Hospital One Hundred Years Ago, New York, Paul B. Hoeber, Inc., 1930

The prevention of infection during operations, which was the second of the requirements for the advancement of surgery, was largely the work of the Englishman Lister. The dramatic story of his work is familiar to every medical student and needs not be repeated here. One aspect of it, however, deserves emphasis, particularly to young men who are about to embark on surgical careers. What I have in mind is the fact that the young surgeon in Glasgow, Lister, became acquainted with the work of the young chemist in Paris, Pasteur, from which he received much of the inspiration responsible for his epoch making contributions to surgery. One often gains inspiration and ideas from a knowledge of work in a field apparently remote from one's own.

Even after methods had been established for the prevention of pain and infections during operations, patients too often died for reasons which were by no means clear. The blood pressure would fall, the pulse become rapid and weak and the patient's skin cold and moist. The condition finally became designated as "surgical" or "traumatic shock." Although there are still some poorly understood features of shock, methods of preventing and treating it are now so well known that the condition no longer haunts the surgeon as it did a couple of decades ago. The contrast between the incidence of shock in the last war as compared with the first world war is dramatic. Risking the accusation of being chauvinistic, I like to think that the conquest of surgical shock, like the contribution of surgical anesthesia, has been largely American. One of the first to undertake a serious experimental study into its nature was George Crile, who in 1899 showed the importance of raising the blood pressure by the transfusion of fluid. Although many of his later ideas on the nature of shock were not accepted, he made surgeons everywhere "shock conscious" by his frequent writings and emphasis on the condition. Although blood transfusion, which Crile and others before him recognized as being the ideal remedy for shock produced by hemorrhage, was not practical and safe until the Austrian Landsteiner, also in 1899, demonstrated the different blood groups, the practical and convenient method of administering the blood by the addition of sodium citrate to prevent its clotting was the idea of Lewisohn of New York shortly after World War I. It is doubtful that the transfusion of blood could have been practiced very generally without the simple but important modification of technic that Lewisohn proposed. The modern blood bank, which has made blood readily available for the prevention and treatment of shock in the operating room, is chiefly an American contribution. Moreover, mention should be made of the dried plasma devised by Stuart Mudd and first used in shock by Ravdin, both of Philadelphia, and of the work of your own Cohn in the preparation of albumin and of fibrin foam, the first of several agents developed from the blood to assist in the prevention of hemorrhage, a precursor of shock. It is a pity that time will not allow of a discussion of the important work of Blalock and many others.

Thus two of what seem to me to be the three major foundations of modern surgery have been largely American contributions. We surgeons can take justifiable pride in this fact.

INTERN, PHYSICIAN AND NURSE ANESTHETISTS

But, to return to the subject of anesthesia, Morton could hardly have foreseen that a century after his momentous demonstration of the use of ether there would be many substances available for the elimination of pain during an operation and that many different technics would be available and necessary for the different uses of the anesthetic agents requiring knowledge by those who would use them for their complicated actions on the living body. Likewise it probably did not occur to him that a separate division of medicine known as anesthesiology would arise whose practitioners would be known as anesthesiologists. It's lucky for them as well as for the rest of us that Oliver Wendell Holmes coined that word "anesthesia." It would be horrible to contemplate what we might have suffered if Bigelow's[5] word "insensibility" had remained. What would the present day anesthesiologist then be called?

For more than half a century after the demonstration of ether anesthesia its practice was regarded as so simple and free from danger that it was considered that no special knowledge or training was necessary in order to "give an anesthetic," to use the popular expression current among the house staff. The youngest and most inexperienced interns were entrusted with this complicated and dangerous performance. In retrospect it seems incredible that this could have been so. Yet I well remember my own terrifying experiences as a young intern anesthetist. That many patients died as a result of improperly administered anesthesia goes without saying.

For some strange reason the profession of physician anesthetist, or anesthesiologist, did not make a strong appeal in this country until very recently. Those with M.D. degrees were not attracted to a career as professional anesthetist, although in England, since the early days, probably most of the anesthesia has been entrusted to physicians. In order to obtain better anesthesia than that provided by the unskilled interns, about 1907 Dr. George Crile and the Mayo brothers trained specially selected graduate nurses to take charge of the anesthesia in their clinics. Shortly after the first world war a school for the training of nurse anesthetists was established at the Lakeside Hospital, Cleveland. Later similar schools were created elsewhere, and hundreds of nurses were trained in the art of administering anesthetic drugs. No one can deny that the creation of the nurse anesthetist resulted in a vast improvement in the quality of the anesthesia and of the surgery throughout the country. The slipshod practice of having it conducted by interns and still worse by the referring physicians gave way to the employment of professional anesthetists, albeit nurses. Now, however, more and more doctors of medicine are taking up careers as specialists in anesthesiology. This long delayed movement is in the right direction. A splendid example is afforded in your own Dr. Henry Beecher, who is training young doctors to become experts in this field, just as young surgeons and other specialists are being trained, by devoting a period of years to the process. The physician because of his superior education in the science of medicine is better qualified than the nurse to understand the many complicated effects of the anesthetic drugs on the body, and he is more likely to advance our fundamental knowledge of the field.

---

[5] Bigelow, H. J.: Insensibility During Surgical Operations Produced by Inhalation, Boston M. & S. J. 35: 309, 1846.

There are some prominent anesthesiologists who would eliminate completely the nurse anesthetist. They have even supported legislation in some states which would make it illegal for a surgeon to engage the services of a nurse anesthetist. This, it seems to me, is a most unrealistic attitude to take. There are seven thousand hospitals in this country but at most only a few hundred professional physician anesthetists. They can conduct only a small fraction of the anesthesias in the country. Who will handle the rest? Shall we return to the old custom of having the inexperienced intern or the doctor who refers the patient to the surgeon administer the anesthesia? God forbid! The best solution to the problem then is to encourage the training of the nurse anesthetist until there are enough physician anesthesiologists to fill the demand. There has been no opposition, as far as I know, to the idea of the laboratory or x-ray technician. Why should there be opposition to the nurse anesthetist technician? In the larger hospitals she should be under the direction of an anesthesiologist who holds the M.D. degree and has spent several years in graduate training in his field. But in the smaller hospitals, or in those in which a physician anesthesiologist is not available, she will prove invaluable. There is no doubt that already she has saved the lives of thousands who would have died if they had been subjected to the kind of anesthesia which the unskilled physician gives. The possession of the M.D. degree by itself certainly does not qualify one in a professional sense to administer an anesthetic drug safely.

If we are to continue to have nurse anesthetists for at least an indefinite period, where are they to be trained? Should they not receive their instruction in this dangerous art in our best teaching hospitals, where they can have the benefit of the teaching of the best professional anesthesiologists, or should they be compelled to seek their instruction casually in doctors' offices? I think there can be only one answer to this question. Yet again there are those of great influence in this new profession of anesthesiology who would, if they could, abolish all opportunities in our hospitals for the nurse, or for that matter any one not possessing the M.D. degree, to obtain instruction in the art of anesthesia. What would Morton, the dentist, think of that, the man whose epoch-making work we are celebrating today? Let us not have any humbug in affording the benefit of that work to all the people.

Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association
and Hygeia, the Health Magazine
Chicago

(Continued from page 26)

(NOTE.—*Following is the tenth chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of THE JOURNAL. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in THE JOURNAL. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—ED.)

CHAPTER 10. *The Question of Cultism in Medical Practice*

1870-1874

1870

WASHINGTON, D. C.

As the delegates assembled in Washington for the Twenty-First Annual Session in 1870, there were signs of disaffection within the Association. Majority and minority reports from the Committee on Arrangements were promptly referred to the Committee on Ethics for decision. Several members took a hand in the argument. Eventually it developed that the Massachusetts Medical Society was tolerating in its midst men acknowledged to have become homeopaths and eclectics. The committee felt that the society could not be barred from the current convention because of the presence of these members but felt that unless the said society took the necessary steps to purge itself of irregular practitioners it ought not to be entitled to future representation in the American Medical Association.

There was also some disturbance over the number of delegates from the District of Columbia.

THE FOUNDING OF THE JOURNAL

Most important, however, was a resolution introduced by Dr. S. D. Gross to the effect that the Transactions should be published in a journal to be called The American Medical Association Journal, issued monthly under the supervision of a competent doctor. The resolution was referred to a committee of five for their consideration.

At this convention also a resolution was introduced urging the government of the United States to establish a national school of medicine. This resolution was referred to a committee for report the following year.

Much of the time was taken in the consideration of the right of specialists to issue cards announcing their specialties and the right of a physician not a resident of any given state to represent that state in the House of Delegates.

ACC. NO. 57

A committee was established to prepare a nomenclature of diseases. By this time also there was some concern over the technic of teaching residents and interns in hospitals, and the society resolved that it was not within the purview of the general management of a hospital to interfere at all with the subject of medical instruction, which belongs to the medical staff.

Far in advance of its time was a resolution requesting the editors of medical journals to refuse to notice in their journals all "patent" medicines, instruments, works of unprofessional or unscientific character, nonchartered institutions or hospitals and the cards of specialists.

ADMISSION OF NEGRO DELEGATES

A considerable division of membership of the Association arose as well over representation of the National Medical Society in the District of Columbia, the Howard Medical College, Freedman's Hospital and the Smallpox Hospital. The majority report made by N. S. Davis would have barred these institutions because of charges that had been filed against them. The minority report, headed by Dr. Alfred Stillé, recommended their admission. The majority report was sustained by a vote of 115 to 90, and these institutions were barred from membership. The nature of the charges was not at first made clear. On the next day, however, the question was again raised and a motion from Dr. G. S. Palmer of Maine demanded the reason for the barring of men from Howard University. Dr. Davis promised to give in writing the reason for the action of the majority of the committee. When Dr. Davis presented his report, it was worded to indicate that the delegates from the medical department of Howard University were barred because they were also members of the National Medical Society of the District of Columbia and that it had been brought to the attention of the Committee on Ethics that the said National Medical Society recognized and received as members medical men who were not licensed to practice. Following the presentation of this report there was further debate, after which Dr. H. R. Storer of Massachusetts offered the following statement:

> Resolved, That inasmuch as it has been distinctly stated and proved that the consideration of race and color has had nothing whatsoever to do with the decision of the question of the reception of the Washington delegates, and inasmuch as charges have been distinctly made in open session today attaching the stigma of dishonor to parties implicated, which charges have not been denied by them, though present, therefore
>
> The report of the majority of the Committee on Ethics be declared, as to all intents and purposes, unanimously adopted by the Association.

This motion passed 112 to 34.

THE LIBRARY

New at this time was the report of the librarian of the American Medical Association, who had been engaged since the last annual meeting in endeavoring to carry out the expressed wishes of the American Medical Association with regard to the formation of an American National Medical Library to be located at Washington, D. C. A circular had been sent widespread and a good many books had been received, but the Congressional Library Committee had not authorized the Library of Congress to receive the books belonging to the American Medical Association as a special deposit. Therefore a room had been fitted up in the Smithsonian Institution to house this library, and a device had been engraved for use on labels of the books belonging to this collection.

ANTICIPATING THE NEED FOR QUININE

Significant at this time was the publication of a memorial that had been sent to the Congress trying to get the Congress to plan for cultivation of the cinchona tree in the United States. When the Japanese occupied Java as one of their first steps in World War II, we realized the need for an American source of cinchona. Had it not been for the development of the synthetic quinacrine hydrochloride (atabrine) and the utilization of some cinchona from South America, we might have found ourselves in a serious state in the war against malaria.

1871

SAN FRANCISCO

Now the Association journeyed for the first time to the Pacific coast and held its meeting in May in San Francisco.

The committee to establish a journal had no report. The committee on nomenclature of diseases reported progress. The committee on medical literature had no report. The trip to the Pacific coast may have exhausted the delegates.

Now also there was introduced for the first time the concept of an organization within medicine itself to raise the standard of medical practice. A resolution proposed that the American Medical Association take measures to establish a National Academy of Medicine to which men of distinction could be elevated from the ranks and that a board of examiners function to govern entrance to this academy. This was no doubt the first step toward certifying boards for specialists.

The Massachusetts Medical Society reported that it had expelled from fellowship all those who publicly professed to practice in accordance with any exclusive dogma, whether calling themselves homeopaths, hydropaths, eclectics or what not.

From the California State Medical Society came a resolution congratulating the states of Massachusetts and California on having established departments of state medicine and urging that all the states set up departments for the prevention of disease and the correction of those agencies which injure the human race and, furthermore, that as soon as six states should set up such departments a National Health Council be formed as an auxiliary to the American Medical Association.

By this time 339 volumes including pamphlets and monographs had been collected in the Smithsonian Institution, but scarcely an American textbook had been added.

WOMEN IN MEDICINE

In his presidential address Dr. Alfred Stillé embarked on an attack on women in the medical profession, admitting their right to study medicine and to practice it but, in general, arguing that they could never qualify to eminence in the profession. Here is an example of his logic:

> Certain women seek to rival men in manly sports and occupations, and the "strong-minded" ape them assiduously in all things, even in dress. In doing so, they may command a sort of admiration such as all monstrous productions inspire, especially when they tend towards a higher type than their own.

[illegible] Library
D. M. C. Medical College

> But a man with feminine traits of character, or with the frame and carriage of a female, is despised both by the sex he ostensibly belongs to, and that of which he is at once a caricature and a libel. In every department of active life man excels woman, excels her even in things for which she is esteemed most fit. In the arts of design, in painting and sculpture, no woman, albeit the artist's career has always been open to her, has ever risen far above mediocrity; while men have excelled women in not a few employments which are regarded as essentially feminine. In the art of cookery, for example, no woman ever occupied the first rank; and in more than one capital, male hairdressers and dressmakers set the fashions in which court ladies and city dames contend for the palm of beauty.

And he concluded this talk with even more bad logic:

> On the whole, then, we believe that all experience teaches that woman is characterized by a combination of distinctive qualities, of which the most striking are uncertainty of rational judgment, capriciousness of sentiment, fickleness of purpose, and indecision of action, which totally unfit her for professional pursuits. Judged by one of her own sex, the verdict is in these words: "The ignorance, the inexactness, the untrustworthiness, the unbusiness-like ways of women, are appalling. Men are as bad as they can be, one is sometimes tempted to say; but apparently they cannot be so bad as women in these respects. Long ages of experience have, at least, educated them into a consciousness of the difference between yes and no; but women have yet to learn that they are not one and the same word. . . . They seem to lack a moral sense, or a mental perception, or whatever the faculty is which makes one capable of contracting an engagement. They do not comprehend its nature. It has for them no more binding force than a rope of sand. They break it with a serene unconsciousness that anything is broken, or that there was anything to break.
>
> If, then, woman is unfitted by nature to become a physician, we should, when we oppose her pretensions, be acquitted of any malicious or even unkindly spirit. We may admit that she is in some sense a perfected man, and was created even a little less lower than the angels; we may admit that, guided by her affections, her judgments sometimes resemble inspirations; but in the business of life, and especially in the practice of a scientific art, it nevertheless may be true, and probably is so, that she usually displays a strange ignorance of the logic of reason, and a profound contempt for the logic of facts.

And he closed his address with a vigorous defense of the use of alcohol in medicine and an attack on those who were fighting the battle of temperance.

1872

PHILADELPHIA

The meeting of 1872 opened in Horticultural Hall but moved shortly to Presbyterian Church because people could not be heard in the original place of meeting. The sessions were largely routine on the first day, with some undistinguished papers and some routine considerations in the House of Delegates.

Then on the second day Dr. S. B. Merkel proposed to bring before the Association George Thomas, "a native of Brazil, who, although externally well formed, can move his heart about at will; and can also whirl the abdomen like a huge ball, with an undulating motion, around the umbilicus." This offer was referred to the Section on the Practice of Medicine and Obstetrics.

There was an extensive report from the committee on nomenclature of diseases, with a recommendation that it be referred for publication, but a minority report said that the matter was too important to be adopted in a hurry and suggested, rather, that extra copies be printed for circulation to the members of the medical profession so that their opinions might be ascertained.

The motion to establish a National Academy of Medicine was brought out and recommended for passage, but the motion was lost and the subject dropped.

STATE HEALTH DEPARTMENTS

The Committee on a National Health Council indicated that it had circularized thirty states with a view to getting the establishment of state health departments and that some progress was being made. However, there was already misunderstanding among the medical profession as to the significance of the term "state medicine" so that the committee said:

> As the phrase "State Medicine" is perhaps imperfectly understood by many of the profession, and is absolutely new to the general public, we wish here, parenthetically, to give an idea of what it is, quote the list of subjects which have been suggested as properly appertaining to it by a committee of the General Medical Council of Great Britain. They are: Forensic Medicine, Toxicology, Morbid Anatomy, Psychological Medicine, Laws of Evidence, Preventive Medicine, Vital and Sanitary Statistics, Medical Topography and certain portions of Engineering Science and Practice. In short, as a member of the committee well expresses it, State Medicine consists in the application of medical knowledge and skill to the benefit of communities, which is obviously a very different thing from their application to the benefit of individuals in private or curative medicine.

The concluding action of this committee was to ask that it be continued and that a special section on state medicine and public hygiene be constituted as one of the scientific sections of the Association.

The Committee on Ethics reaffirmed its previous actions relative to the refusal to admit the Freedman Hospital, the Howard University and the Academy of Medicine of Washington, D. C., to representation because some of the members of their staff were unlicensed and because one of the teachers in Howard University was a woman. The battle over the status of the physicians, the societies and the schools in the District of Columbia was fiercely fought on the floor of the convention. At the end of the extensive discussions, the report of the Committee on Ethics barring the representatives from these agencies was adopted by a large majority.

Again the delegates besought the Congress of the United States to give some attention to the cultivation of the cinchona tree, pointing out that the British and the Dutch were hard at work on this project, but apparently Congress refused to take any action.

THE PERMANENT SECRETARY

Now there arose the delicate question of the remuneration of the permanent secretary, Dr. William B. Atkinson. His duties had become more engrossing every year with the growth of the Association and his remuneration was nil. Therefore the resolution was offered that he be paid a salary of $1,000 a year in quarterly payments, and the session unanimously resolved to present him with $500 as a testimonial to his merit.

An attempt was made to get through a resolution upholding Horace Wells as the discoverer of anesthesia, and the resolution was laid on the table. As late as 1946 this question was again before the Association and again it was tabled.

Another resolution suggested that "whilst we admit the right of women to acquire medical education and to practice medicine and surgery in all their departments, we deem the public association of the sexes in our medical schools and at the mixed clinics of our hospitals, as impracticable, unnecessary, and derogatory to the instincts of true modesty in either sex." This resolution was also laid on the table. After a while a resolution was made to take it off the table, and after some more discussion it was indefinitely postponed.

The President of the Association, Dr. D. W. Yandell, presented a strong defense of the right of women to practice medicine but he would have limited them to certain specialties. He trusted that not many would incline to surgery, but he thought that they would be welcome visitors to many a sick chamber. "If young and handsome," he said, "I have no doubt valetudinarians of our sex would look for their morning calls as they might for angel visits, only that they would not have them 'short and far between.'" He felt that the public should really make the decision on the use of women physicians and he concluded this part of his discussion by saying:

> What the people decree in this matter is a law to which all, we and the women alike, must bow submissively. If they want women doctors, such will be found ready to meet the demand. If those now pressing forward in their studies so eagerly, find their services are not wanted, they will take down their signs, get married—if they can—or turn lecturers, or to some more lucrative employment. I hope they will never embarrass us by a personal application for seats in this Association. I could not vote for that.

1873

ST. LOUIS

Most significant of the business before the Association's meeting in 1873 was the report of the special committee to plan for better arrangements by the sections for the more rigid examination of papers offered for publication. A few of the sections were receiving maximum attendance but a few listeners. A reorganization was suggested. The Committee of Publications was not doing a good job in rejecting unworthy manuscripts and was condemned for its failure to be more strict. That perhaps explains the skimpiness of the volume of Transactions for that year.

THE JUDICIAL COUNCIL

This year saw also a resolution offered by Dr. N. S. Davis for the creation of a judicial council to decide all questions of an ethical or judicial character that might arise in connection with the Association. His resolution was unanimously adopted.

From the Army came a request that the Association join its efforts to obtaining better ranks and higher promotions for the medical officers of the Army.

DISINTEREST IN NOMENCLATURE

The committee on nomenclature reported that not a single response had been received from any medical journal, and only two from physicians, to the request for the circularization of the nomenclature.

A long report dealt with the proposed salary of $1,000 a year for the permanent secretary. The committee felt that the secretary was already receiving payment of his expenses in attendance on the conventions; they felt that the revenue of the Association was inadequate to meet a salary of $1,000 a year and that, furthermore, the payment of the salary of $500 to $1,000 a year would speedily develop a number of aspirants for the position, each with his circle of friends among the members, all of whom would be quick to perceive the errors and to note the slightest tardiness or discourtesy on the part of the incumbent of the office, and that this job would be sought as a political plum. The suggestion of a salary was therefore rejected, but a motion that he be given an honorarium was approved, provided sufficient money was left in the treasury after paying the expenses of the Association.

The meeting closed with a number of resolutions condemning the alarming prevalence of ill effects of intemperance. The resolutions were either tabled or referred to committees.

1874

DETROIT

The second annual session of the Association to take place in Detroit abandoned the Fire House and moved into Hough's Detroit Theatre. Detroit had grown in the intervening years from a city of 40,000 to one of 100,000 inhabitants.

The speech of welcome was a glorification of the growth of this great industrial city and of its new city hall (erected at a cost of $600,000), from whose dome not only the city but Lake Erie was visible. The speaker boasted of the excellent sewerage system, the public school system (due chiefly to Dr. Pitcher), the public library and the police and fire departments.

THE PRINCIPLES OF ETHICS

Significant was the introduction of a report by Dr. N. S. Davis of Illinois, chairman of the Judicial Council, who had ascertained the sentiments of the physicians relative to revisions in the Principles of Ethics. It had been proposed to strike out everything having to do with the relations of the patient, the community and the public toward the members of the profession. It was felt that there ought to be more said about specialties and contract practice. After carefully reviewing the entire subject, the committee did not recommend any alteration in the Code of Ethics but desired "to express the opinion that if every medical school and society would supply each graduate as he left the school, and each member initiated into the society, with a printed copy of the Code, accompanied with the injunction that it be carefully studied, it would be productive of much good, directly to the profession and indirectly to the community." The report was unanimously adopted.

As a result of the pressure brought by the Association a bill had been introduced into the Congress relative to improved status for the medical staff of the Army. The bill had been introduced and referred to the military committee, which however had failed to take action. A resolution was therefore adopted regarding this failure to take action and sent along to the Congress.

INDEX CATALOGUE OF THE SURGEON GENERAL'S LIBRARY

Now also Dr. John Shaw Billings, assistant surgeon, United States Army, by direction of the Surgeon General forwarded to the American Medical Association a copy of the "Catalogue of the Surgeon General's Office" in three volumes. He called attention to the fact that 65,000 titles were now in the library but that this was not more than one third of what the national medical collection should contain. It was proposed to issue a new catalogue arranged according to subjects and authors. He urged physicians everywhere to send to the library files of American medical journals, transactions of medical societies, announcements of medical colleges and reports of hospitals, asylums and boards of health. "These medical pamphlets," he said, "cannot be purchased and the only prospect of obtaining them is from the garrets, closets and shelves of physicians who may have preserved them and may be willing to part with them in consideration of the object for which they are desired."

The address of the President, Dr. Joseph M. Toner, made several recommendations which stimulated action in the Association. He urged particularly the formation of a complete system of state and local medical societies and also of an international medical society.

Because the centennial of the founding of the United States was to be celebrated in Philadelphia in 1876, an invitation came from that city to hold the annual session of the American Medical Association in Philadelphia on July 4, 1876 and to invite the medical profession of the world to attend the meetings.

A resolution was passed that a suitable die for a medal be prepared with a likeness of N. S. Davis on one side and the name and date of the organization of the Association on the opposite side, with instructions that a copy be furnished to each delegate on becoming a member and also that all present as well as future members of the Association be furnished with this medal.

A motion was made to recompense the secretary with $300 for his services. On motion of J. Marion Sims of New York, this was increased to $500. The motion was seconded and adopted.

The treasurer of the Association was glad to report that "as a result of more than usual discretion on the part of the last meeting of the Association, and the more than usual care exercised in referring matter to the Committee of Publication, the volume of Transactions is of moderate size." Because of a lack of demand, there had accumulated some 2,000 volumes of previous issues of the Transactions and the treasurer moved that he be allowed to dispose of these. With this suggestion, Dr. Caspar Wistar, the treasurer, offered his resignation.

A resolution was offered by Dr. Keller of Kentucky that a committee be established relative to passing proper legislation to prevent the spread of syphilis.

ADVANCES IN DIAGNOSTIC METHODS

In his presidential address Dr. Joseph Toner called attention to the beginning of laboratory and other technical methods used in the diagnosis and treatment of disease. He said:

> The successful medical man must be fully up with the age and the times, conversant with the latest means of diagnosis, the theory of diseases and their cures. He must have tested the newest remedy, examined the most recent invention; he must have read the latest telegram. And, indeed, the genius of the profession, responding to these demands, has devised physical tests for an exact diagnosis in almost every important disease. There is scarcely a vital function the normal or diseased action of which cannot be determined with accuracy through the aid of some chemical test or mechanical device.[1] The improvement in this direction is still actively progressing.

He called on the medical profession to urge particularly more state, county and city boards of health.

SYPHILIS

The address in surgery was delivered by S. D. Gross and was entitled "Syphilis in Its Relation to the National Health." He said that the assertion that syphilis originated in the new world and was carried back by the sailors of Columbus is without the slightest foundation in truth but, instead, that the sailors of Columbus had infected the natives. While this belief is still subject to some argument today, the vast majority of evidence inclines to the former view. His address was nevertheless a most scholarly presentation of the available knowledge of his day concerning this disease. He urged as the only possible technic for preventing its spread, the licensure of prostitution. He was a little ahead of his time in urging that people should not be allowed to marry until they could obtain a certificate showing that they did not have syphilis—but, of course, at that time there were no accurate tests of the presence of the disease such as the Wassermann and Kahn tests used today.

(To be continued)

---

[1] The dynamometer, the microscope, the ophthalmoscope, the laryngoscope, the rhinoscope, the stethoscope, the pleximeter, the endoscope, the speculum, the sphygmograph, the spirometer, the thermometer, the anesthesiometer, anesthetics, chemical examination of excretions and so on.

Clinical Notes, Suggestions and New Instruments

CONVULSIVE SEIZURES FOLLOWING BARBITURATE WITHDRAWAL

CARROLL W. OSGOOD, M.D.
Wauwatosa, Wis.

Despite the well recognized hazards of injudicious use of barbiturates, the controlled employment of these drugs in the care of institutionalized patients has in my experience been safe and effective. Seldom has a sustained increase in dosage been necessary, such as would point to development of tolerance; and most patients, with improvement or recovery, have lost their insomnia and have been able to discontinue hypnotics with little difficulty. Nevertheless, observations over the past fourteen years at a private sanatorium for the treatment of nervous and mental disorders show the infrequent occurrence of withdrawal symptoms. Similar observations have been reported in the psychiatric literature [1] but seem not to have gained wide attention. General discussions of the barbiturate "problem" [2] have failed to mention the symptoms about to be described.

Six patients at the sanatorium have had from one to three convulsive seizures following reduction or discontinuance of barbiturates. None of these had a previous history of seizures [3] and none had subsequent seizures during his time in the hospital or later, as far as is known to me. While previously reported seizures [1] have followed complete and sudden withdrawal of the drug, 4 of the 6 patients mentioned herein had convulsions in the course of gradual withdrawal. Three additional patients gave a history of seizures following the withdrawl of barbiturates prior to coming to the sanatorium, and 2 other instances from private practice have been brought to my attention.[4] Available data on patients seen at the sanatorium are given in the accompanying table.

---

[1] Dunning, H. S.: Convulsions Following Withdrawal of Sedative Medication, Internat. Clin. **3:** 254 (Sept.) 1940. Kalinowsky, L. B.: Convulsions in Nonepileptic Patients on Withdrawal of Barbiturates, Alcohol and Other Drugs, Arch. Neurol. & Psychiat. **48:** 946-956 (Dec.) 1942. Brownstein, S. R., and Pacella, B. L.: Convulsions Following Abrupt Withdrawal of Barbiturate: Clinical and Electroencephalographic Studies, Psychiatric Quart. **17:** 112-122 (Jan.) 1943.

[2] Tatum, A. L., and Seevers, M. H.: Theories of Drug Addiction, Physiol. Rev. **11:** 107-121 (April) 1931. Regulation of Sale of Barbiturates by Statute: Prepared by the Bureau of Legal Medicine and Legislation, American Medical Association, J. A. M. A. **114:** 2029-2036 (May 18) 1940. Hambourger, W.: Promiscuous Use [illegible] of Hospital Data, ibid. **114:** 2015-2019 (May [illegible] Use of Barbiturates: Use in Suicides, ibid. [illegible] 1939. Collins, G. W., and Leech, P. N.: Indispensable Uses of Narcotics: Chemistry of Barbital and Its Derivatives, ibid. **96:** 1869-1871 (May 30) 1931. Therapy with the Barbiturates, Eli Lilly and Company. Sedatives and Habit Formation, Dios Chemical Company, 1944.

[3] Except 1 associated with barbiturate withdrawal.

[4] (*a*) Howard, M. Q.: Personal communication to the author. (*b*) Belknap, E. L.: *ibid.*

Most of the patients here mentioned had gradually increased their consumption of barbiturates to much larger than average dosages and had continued it over periods of months or years. One convulsion occurred during reduction of sodium amytal following prolonged therapeutic sleep. While none of the convulsions has had any subsequent ill effect on the patient, these seizures have created a fear of possible idiopathic epilepsy or of some organic brain lesion and have caused concern to the patients, their relatives and their physicians. Knowledge of the possibility of this reaction as a result of barbiturate reduction or withdrawal is thus of importance in differential diagnosis. In 1 instance reported to me [3a] the occurrence of convulsions served to clinch the diagnosis of suspected barbiturate addiction in a woman who had previously denied it and whose husband was unaware of it. The manifestation is of interest, also, in confirming the existence of true physiologic addiction to barbiturate compounds.

Milwaukee Sanitarium, Wauwatosa 13.

Data on Convulsive Seizures Following the Withdrawal of Barbiturates

Case	Sex	Drug	Daily Dose		Duration	Reduction at Time of Convulsion	Number of Convulsions	Day of Convulsion After Reduction Begun	Comment
			Grains	Gm.					
1. H. F. R.	♂	Neonal sodium Phenobarbital	18 1½	1.16 0.1	3 yrs.	To 6 grains (0.39 Gm.) sodium amytal	1	2d	Enlarged liver, myocardial degeneration; age 77
2. C. A.	♀	Pentobarbital sodium	18-21	1.16-1.55	2 mos.	To ?	3 in one day	?	History only of these convulsions; occurred prior to admission
		Pentobarbital sodium	12	0.78	3½ mos.	To 9 grains (0.58 Gm.)	2	2d and 5th	These convulsions while in sanatorium
3. O. E. L.	♂	Seconal sodium Phenobarbital	9 2	0.58 0.13	1½-2 yrs.	Seconal sodium to 3¾ grains (0.24 Gm.) Phenobarbital to 0	1	3d	Wife had noted rare spells (during period of barbiturate consumption) when patient was unresponsive and eyes rolled
4. W. H.	♂	Pentobarbital sodium	?		Several months	To 0 (abrupt withdrawal)	1	3d	
5. R. B. S.	♀	Sodium amytal	48	3.11	2 wks.	To 9 grains (0.58 Gm.)	1	4th	In course of prolonged therapeutic sleep
6. B. D.	♀	Sodium amytal	15	0.97	Several months	To 3 grains (0.19 Gm.) for 7 days. To 0 for 1 day	1	8th	On diphenylhydantoin sodium 1½ grains (0.1 Gm.) daily from time of reduction; had had electroshock therapy 2 years previously
7. R. T. R.	♀	Seconal sodium	9	0.58	5 yrs.	To ?	2	?	History only of these convulsions; occurred before admission
8. S. R. E.	♂	Pentobarbital sodium	Up to 27	1.75	2+ yrs.	To ?	1	?	History only of these convulsions; occurred before admission
9. V. A. M.	♀	Phenobarbital Seconal sodium	? 15-18	 0.97-1.16	5 yrs.	To 0 (abrupt withdrawal)	5	?	History only of these convulsions; occurred before admission; delirious 5 days after convulsions

CHRONIC PORPHYRIA COMPLICATED BY PREGNANCY

SIDNEY LINAS, M.D.; MILTON L. SOLOMON, M.D.
and
FRANK H. J. FIGGE, Ph.D.
Baltimore

Since there does not appear to be a case of chronic porphyria complicated by pregnancy reported in the literature, it was felt advisable to report a case which has recently been under our care. A preliminary report of this case was made by Taylor, Solomon, Weiland and Figge.[1]

REPORT OF CASE

History.—A white, married woman, aged 20, a native of Baltimore, was hospitalized several months prior to her pregnancy. At that time the diagnosis of chronic porphyria was definitely established. A full report on the history, physical examination, hospital course and progress of this patient appears in the previously cited article.

She was advised against becoming pregnant because of the unknown influence that pregnancy might have on the prognosis of the porphyria and because some types of porphyria appear to be inheritable. However, she apparently disregarded the advice, and in June 1945 she presented herself, at which time she was about two months pregnant. Her last menstrual period had occurred on April 20, 1945, making the estimated date of confinement Jan. 27, 1946. This patient was a primigravida and had been married for fifteen months.

Physical Examination.—The patient was a well developed and well nourished woman with a normal appearance except for cutaneous lesions. Her height was 5 feet 3 inches (160 cm.) and her weight 120 pounds (54.6 Kg.). Her nonpregnant weight was about 116 pounds (52.6 Kg.). Pelvic measurements were essentially normal. Vaginal examination revealed the uterus about the size of a six weeks pregnancy. The only positive observations on examination were the lesions of the skin that the patient exhibited. There were numerous vesicles on the hands and arms and some on the neck. Scattered over the arms, legs, neck and face were small, almost undetectable, brownish pigmented pockmarks from her earlier cutaneous lesions. At this time the patient was on the following treatment regimen: calcium lactate 40 grains (2.6 Gm.), sodium bicarbonate 80 grains (5.2 Gm.) and riboflavin 40 mg. by mouth daily. She also was receiving one ampule of Solu B[2] intramuscularly three times a week and 1 cc. of liver extract (15 U. S. P. units) intramuscularly once a week.

Course and Treatment.—The patient seemed somewhat improved in June 1945, and the administration of Solu B and liver extract was discontinued for one month. Obstetrically, the pregnancy progressed normally, but in July 1945 she began to show a decided exacerbation and extension of the cutaneous lesions. New lesions appeared on the arms, legs, neck and face (exposed surfaces).

Intense itching was present, and some of the lesions were secondarily infected, apparently from scratching. There was pronounced edema of the ankles, and she complained of frequent cramps throughout both legs.

Aided by grants from the Anna Fuller Fund and the Donner Foundation.

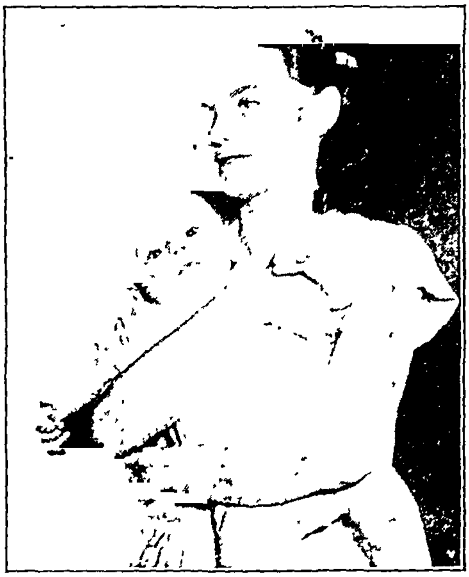
From the West Baltimore General Hospital and the University of Maryland School of Medicine.

[1] Taylor, I. J.; Solomon, M. L.; Weiland, G. S., and Figge, F. J. H.: Chronic Porphyria, J. A. M. A. **131:** 26 (May 4) 1946.

[2] Solu B (The Upjohn Company) is a mixture of thiamine hydrochloride 10 mg., riboflavin 10 mg., pyridoxine hydrochloride 5 mg., calcium pantothenate 50 mg. and nicotinamide 250 mg. in powder form for injection after proper solution has been effected.

By August 1945 the lesions of the skin were much worse and showed more extensive infection, in spite of the previously mentioned therapy and in addition, the use of a skin lotion containing tannic acid, the avoidance of exposure to sunlight and the constant wearing of black clothes. (See photograph in previous report.[1]) Because of the progression of the lesions and the hypothetic possibility of transmission of the disease to the offspring through heredity, interruption of the pregnancy at this point was seriously considered and discussed. In view of the fact that the relationship of pregnancy to chronic porphyria was unknown, and since the strict adherence of the patient to the treatment regimen and the advice given was questioned, it was decided to intensify the treatment and to carry on the pregnancy as far as possible, with the patient under extremely close observation.

When the original porphyrin determinations were made, the patient had been excreting 1,200 to 1,600 micrograms of porphyrin a day. This rate of excretion was continued for almost a year, though it had dropped to approximately 800 to 1,000 micrograms a day with therapy. It increased again during pregnancy to 1,200 micrograms in August 1945. At this time the following therapeutic schedule was established: calcium lactate 40 grains (2.6 Gm.) and sodium bicarbonate 80 grains (5.2 Gm.) by mouth daily. She also received riboflavin 20 mg. every four hours, ascorbic acid 1,000 mg. every four hours and nicotinamide 100 mg. twice daily orally. The intramuscular injection of liver extract was discontinued, and she was given one ampule of Solu B intramuscularly twice weekly. An ointment containing penicillin was used for the lesions of the skin.


Patient on June 27, 1946 showing much improvement of cutaneous lesions. (Compare with photograph in previous report.[1])

The patient felt subjectively better on this regimen, but new lesions continued to appear while the old ones were healing and leaving pigmented areas. This condition continued throughout the remainder of pregnancy. The lesions became secondarily infected from scratching and healed slowly. The penicillin afforded some relief.

In December 1945 she showed a moderate, diffuse, soft enlargement of the thyroid without nodules that could be palpated. Thyrotoxic signs were not present. Her pulse rate remained at 80 to 86 per minute. The blood pressure was 110 to 120 mm. of mercury systolic and 60 to 80 mm. of mercury diastolic. The pregnancy progressed entirely uneventfully except for a slightly excessive gain in weight, a total of 36 pounds (16.6 Kg.). Urinalysis remained negative for albumin and sugar. At the end of pregnancy the patient was still excreting 1,200 micrograms of porphyrin a day.

The patient went into labor spontaneously on Jan. 30, 1946. Labor progressed normally. Seconal sodium and meperidine hydrochloride (Demerol hydrochloride) were used for analgesia. Artificial puncture of the membranes was performed in order to obtain amniotic fluid for study. This fluid was darker than could be accounted for by the small amount of meconium present in it. It contained large amounts of porphyrin, but this was not determined quantitatively because normal amniotic fluid contains high concentrations of coproporphyrin I. This is thought to arise from meconium and varies greatly in different cases. After a total labor of nineteen hours and five minutes, the patient was delivered of a live male child under gas-oxygen-ether anesthesia by low forceps from the right occipito-anterior position after a preliminary mediolateral episiotomy. The baby cried after one minute of mild resuscitation and appeared to be normal. The placenta separated spontaneously and showed fairly extensive diffuse fibrosis. The placenta contained many calcareous deposits which were brilliantly red fluorescent under near ultraviolet light.

The puerperium was entirely afebrile. All medication was discontinued on admission to the hospital. The only medication the patient received subsequent to delivery was ergonovine maleate $\frac{1}{320}$ grain (0.0002 Gm.) every four hours for twenty-four hours and ferrous sulfate 5 grains (0.324 Gm.) three times a day by mouth. Within forty-eight hours after delivery the lesions on the face and neck showed much improvement. The remaining lesions began slowly to regress and dry up, leaving brownish pigmented areas. The milk was examined spectroscopically at this time, and coproporphyrin was found to be present, but the amount of milk available was too small for a quantitative determination.

The baby was not allowed to be breast fed since it was considered advisable to eliminate this source of porphyrin and also to supply the mother with as much rest as possible. The child weighed 7 pounds 15½ ounces (3,614 Gm.) at birth and 7 pounds 5 ounces (3,317 Gm.) on discharge from the hospital. The urine of the baby was collected for the first three days after birth. This collected specimen contained sufficient porphyrin to be evident spectroscopically and to form a red fluorescent precipitate. This disappeared by the third day.

Mother and baby were discharged from the hospital on Feb. 8, 1946.

Laboratory Observations.—Examination of the blood on Jan. 31, 1946 showed a hemoglobin of 62 per cent. On Feb. 1, 1946 examination of the blood revealed 70 per cent hemoglobin with a red cell count of 3,810,000 and a white cell count of 13,900 with 72 per cent neutrophils, 20 per cent lymphocytes, 2 per cent monocytes, 2 per cent eosinophils and 4 per cent stab forms. The blood cholesterol was 220 mg. per hundred cubic centimeters. The icterus index was 5 and the direct and indirect van den Bergh reaction was negative. Other determinations on the blood showed: uric acid 3 mg., urea nitrogen 15 mg., urea 32.1 mg. and serum calcium 10.5 mg. per hundred cubic centimeters. The total protein was 7.15 Gm., the albumin 4.4 Gm., and the globulin 2.75 Gm. per hundred cubic centimeters of blood, making a ratio of 1.6. The Eagle flocculation test was negative; the cephalin was 1 plus. The sulfobromophthalein test revealed 2 per cent retention with 5 mg. of the dye per kilogram of body weight, a blood sample being withdrawn in forty-five minutes.

Subsequent Course.—Since discharge from the hospital the patient has continued to show subjective and objective improvement. The majority of the cutaneous lesions have cleared but have left brownish, pigmented, scarred areas. At the present time she is approximately seven months post partum and has not shown exacerbations of the porphyria. New lesions have appeared from time to time on the exposed surfaces of the skin when the patient is exposed to bright sunlight, but these lesions have been few in number and clear up rapidly. The patient has learned to avoid bright sunlight as much as possible. The only medicament which she has received since delivery, and which she is still taking at the present time, has been ferrous sulfate 10 grains (0.65 Gm.) three times a day. She has carried on her daily household duties in normal fashion; she feels and looks well. The baby has developed normally and has shown no evidence of porphyria. Examination of the patient's urine at three intervals since the birth of the child shows that the porphyria has progressively decreased until at present she is excreting about 400 micrograms of urinary porphyrin a day. This is approximately four times the normal amount.

SUMMARY

A case of chronic porphyria complicated by pregnancy in a woman aged 20 has been presented. During pregnancy there was an exacerbation of her cutaneous lesions and porphyrin excretion, both of which improved rapidly after delivery. The pregnancy was unaffected by the chronic porphyria, and the offspring seems normal as far as can be determined. We would like to be able to make a definite statement in regard to the effect of pregnancy on chronic porphyria, but from our observation in the reported case we cannot definitely say that pregnancy is or is not harmful to the patient with chronic porphyria. The spectacular improvement which started immediately post partum and which has continued for several months makes it appear that the total experience has had a beneficial influence on the patient. This, and the fact that the child appears perfectly normal, would lead one to the conclusion that chronic porphyria is not an indication for the interruption of pregnancy.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

The Council has authorized publication of the following statement.

Austin Smith, M.D., *Secretary*.

THE STATUS OF METHIONINE IN THE PREVENTION AND TREATMENT OF LIVER INJURY

A manufacturer has presented a brand of methionine to the Council for inclusion in New and Nonofficial Remedies. The conditions for which methionine has been reported to be beneficial include its use in the prevention and treatment of liver injury due to poisonous agents such as arsenic, chloroform, carbon tetrachloride and trinitrotoluene. In addition, the use of methionine has been recommended in the treatment of eclampsia, shock, infectious hepatitis and cirrhosis of the liver. The Council has reviewed the available evidence with regard to the value of methionine in these conditions and feels that, although this drug offers some therapeutic promise, further work is necessary before the claims of the manufacturers may be considered to be established.

Various investigators[1] have presented evidence based on animal experiments that liver injury, particularly fatty infiltration, may be produced by dietary deficiencies. Best and Rideout[2] suggested choline as the necessary constituent of the diet to prevent fatty changes of the liver.

Certain chemical agents produce pathologic lesions in the livers of experimental animals closely resembling those seen in human beings with portal cirrhosis. Miller, Ross and Whipple[3] reported that either methionine or cystine would protect dogs against liver damage produced by chloroform. György and Goldblatt,[4] on the other hand, showed that in rats on a low protein diet necrosis or cirrhosis of the liver would develop which could be partially prevented by administration of choline but which was accentuated by the feeding of cystine. Addition of choline or yeast to the cystine diet prevented the liver changes.

Daft, Sebrell and Lillie[5] confirmed the work of György and Goldblatt and found that some protection to the livers of their animals was afforded by addition of choline, methionine and casein. It was concluded by György and Goldblatt[6] that the cirrhosis produced in animals by a low protein diet could be prevented by a combination of choline and cystine or by methionine alone.

Drill and Loomis[7] have shown that methionine feeding does not decrease the liver damage resulting from carbon tetrachloride poisoning in dogs maintained on a normal protein intake of 20 per cent or 41 per cent casein. In protein-depleted dogs methionine appeared to be responsible for a decrease in the degree of liver damage following carbon tetrachloride poisoning.

It is to be emphasized, however, that the dietary cirrhosis seen in animals is not histologically the same as portal cirrhosis in man[8] and that the animal experiments discussed here, while encouraging, need clinical confirmation by carefully controlled investigations on human patients.

Methionine has been used in the treatment of "postarsenical" liver damage with equivocal results. Beattie and Marshall[9] reported that methionine and cystine would protect patients against liver damage due to arsphenamine; however, critical examination of their data shows that, although the onset may have been delayed slightly by the treatment, the patients did have liver damage. The experiments were inadequately controlled and have been criticized by Peters and his associates.[10]

There is no evidence for the value of methionine in eclampsia. A thesis by Rinehart[11] suggests, but does not prove, that this toxemia may be associated with inadequate protein intake. On the basis of this thesis the manufacturers who presented methionine to the Council have suggested that this amino acid will prevent eclamptogenic toxemia.

The clinical evidence for the usefulness of methionine in the treatment of liver injury due to chloroform, carbon tetrachloride and trinitrotoluene is on slightly firmer ground. Beattie and his associates[12] reported 1 case of acute carbon tetrachloride poisoning in which recovery appeared to be influenced by massive doses of methionine. Eddy[13] has reported a few cases of carbon tetrachloride poisoning treated with a high protein, low fat diet plus 6 to 12 Gm. of methionine daily. No control observations were made, and it is not possible to attribute the beneficial results to the administration of methionine alone, since the diet used is known to have a beneficial action. The same criticism may be made of Eddy's later report[14] on methionine treatment of trinitrotoluene poisoning.

Peters and Croft[15] have suggested the use of methionine for patients with severe burns, since it is known that liver damage frequently occurs in such instances. However, no clinical investigations were reported and their conclusions were based on partially controlled animal experiments.

Although the manufacturers of methionine suggest its use in the treatment of infectious hepatitis, Wilson, Pollock and Harris[16] reported no significant effect on the severity or duration of the disease in patients treated with methionine. A member of the Council who had extensive experience with methionine and infectious hepatitis in the recent war also points out that methionine could not be demonstrated to affect the course of the disease.

The paucity of controlled clinical evidence on the value of methionine in the treatment or prevention of liver injury leads the Council to the conclusion that no claims for this product may be recognized at this time; but in view of the encouraging animal experiments, careful clinical trial of this agent by competent investigators should be made. Until further convincing evidence of the usefulness of methionine in liver disease is available, the Council has deferred acceptance of brands for inclusion in New and Nonofficial Remedies.

---

[1] Curtis, A. C., and Newburgh, L. H.: The Toxic Action of Cystine on the Kidney, Arch. Int. Med. **39:** 828-832, 1927. Lillie, R. D.: Pub. Health Rep. **47:** 83-93, 1932. György, Paul, and Goldblatt, Harry: J. Exper. Med. **70:** 185-192, 1939.

[2] Best, C. H., and Rideout, Hessie H.: Ann. Rev. Biochem. **8:** 349-370, 1939.

[3] Miller, Leon L.; Ross, Joseph F., and Whipple, G. F.: Am. J. M. Sc. **200:** 739-756, 1940.

[4] György, Paul, and Goldblatt, Harry: Proc. Soc. Exper. Biol. & Med. **46:** 492-494, 1941.

[5] Daft, Sebrell and Lillie: Proc. Soc. Exper. Biol. & Med. **48:** 228-229, 1941.

[6] György, Paul, and Goldblatt, Harry: J. Exper. Med. **75:** 191-195, 1942.

[7] Drill, V. A., and Loomis, T. A.: Science **103:** 199-201, 1946.

[8] Lillie, R. D.; Ashburn, L. L.; Sebrell, W. H.; Daft, F. S., and Lowry, J. V.: Pub. Health Rep. **57:** 502-508, 1942.

[9] Beattie, J., and Marshall, J.: Nature, London **153:** 525 (April 29), **154:** 547 (Oct. 28) 1944; Brit. M. J. **2:** 651-655 (Nov. 18) 1944.

[10] Peters, R. A.; Thompson, R. H. S.; King, A. J.; Williams, D. I., and Nicol, C. S.: Nature, London **153:** 773 (June 24) 1944.

[11] Rinehart, R. E.: Am. J. Obst. & Gynec. **50:** 48-56, 1945.

[12] Beattie, J.; Herbert, P. H.; Wechtel, C., and Steele, C. W.: Brit. M. J. **1:** 209-211 (Feb. 12) 1944.

[13] Eddy, J. H., Jr.: Carbon Tetrachloride Poisoning, J. A. M. A. **128:** 994-996 (Aug. 4) 1945.

[14] Eddy, J. H.: Am. J. M. Sc. **210:** 374-380 (Sept.) 1945.

[15] Peters, R. A., and Croft, P. B.: Nature, London **155:** 175-176 (Feb. 10) 1945; Lancet **1:** 266-272 (March 3) 1945.

[16] Wilson, Clifford; Pollock, M. R., and Harris, A. D.: Brit. M. J. **1:** 399-401 (March 24) 1945.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - Chicago 10, Ill.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Eight dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, JANUARY 11, 1947

DEATHS OF PHYSICIANS IN 1946

The obituaries of 3,358 physicians were published in The Journal during 1946. The American Medical Directory Report Service recorded 3,312 deaths in the United States, possessions and temporary foreign. In addition approximately 200 notices of deaths had been received but not yet published, giving a total of 3,558 for general consideration. The present analysis, however, is concerned only with the 3,358 deaths published.

Age.—The average age at death was 66.1 years as compared with 65.3 in 1945. Five physicians died between the ages of 20 and 24, 43 between 25 and 29, 70 between 30 and 34, 99 between 35 and 39, 111 between 40 and 44, 132 between 45 and 49, 169 between 50 and 54, 283 between 55 and 59, 377 between 60 and 64, 525 between 65 and 69, 584 between 70 and 74, 452 between 75 and 79, 290 between 80 and 84, 158 between 85 and 89, 50 between 90 and 94 and 6 between 95 and 99, and of the 4 who had reached 100, 1 was 105 years of age.

Causes.—Heart disease remains the leading cause of death among physicians. With primary causes and contributory factors included in the general statistics, coronary thrombosis and occlusion led the heart group with a total of 738; 283 deaths occurred in the ages between 60 and 69. Diseases of the myocardium and pericardium accounted for 123 deaths, angina pectoris and other coronary diseases 106, chronic valvular and rheumatic heart diseases 28, subacute bacterial endocarditis (except rheumatic fever) 7 and other diseases of the heart 375.

Cerebral hemorrhage, thrombosis and embolism accounted for 404 deaths, arteriosclerosis for 185 and cardiovascular diseases for 91. Cancer and tumors were responsible for 352 deaths, 143 of which were classified under cancer of the gastrointestinal tract. Of 199 deaths ascribed to pneumonia, 13 were due to atypical or virus pneumonia. Tuberculosis caused 31 deaths, asthma 10, bronchitis and pleurisy 5, and other diseases of the respiratory system 31. Chronic nephritis and uremia accounted for 111 deaths and acute nephritis for 12. Diseases of the circulatory system caused 72 deaths, diabetes 46, cirrhosis of the liver 35 and other diseases of the liver 3, Hodgkin's disease and leukemia 32 and other diseases of the blood 9, diseases of the nervous system 27, diseases of the prostate 21, pulmonary embolism and thrombosis 19, peptic ulcer (ulcer of the stomach and duodenum) 16, aneurysm 13, influenza 12, diseases of the gallbladder, bile duct and cholecystitis 11, diseases of the spinal cord and peritonitis 10 each, appendicitis 6, diseases of the brain 5, encephalitis, meningitis, pernicious anemia and chronic arthritis 4 each, hernia, mental disease, syphilis, abscess, other infectious diseases, diseases of the bones and organs of locomotion and diseases of the skin 3 each, bacteremia, septicemia and pyemia, alcoholism and epidemic hepatitis 3 each, amebic dysentery 2, and rheumatic fever, poliomyelitis and trichinosis 1 each. Twenty-one deaths followed an operation. Senility was returned as the cause in 29 instances, while the cause of death was ill defined in 7. There were 62 deaths for which the cause was not obtained.

Suicides and Homicides.—Significant is the total of 55 suicides as compared with the 25 recorded for 1945. Twenty-four were attributed to bullet wounds, 9 to drugs, 5 each to cut arteries and poison, 2 each to jumping, illuminating gas, hanging and strangulation, and 1 each to drowning and monoxide gas. The method was not reported in 1 death, and 1 physician threw himself under a train. Of the 6 homicides shooting was the method used in 5, and 1 physician died of injuries received when struck by the husband of a patient.

Accidental Deaths.—Of the 130 accidental deaths, automobiles were involved in 55. One automobile accident occurred in a collision with a train and 1 with a street car. Four deaths were attributed to x-ray accidents and complications. Of the unusual accidents 1 physician was killed by a bolt of lightning while playing golf, 1 of injuries received when he fell under the wheels of a mule drawn wagon, 1 when a tractor he was driving overturned and 1 when a broken power cable wire struck him over the head; 1 died in the La Salle Hotel fire.

Miscellaneous Positions.—Among the decedents were 274 who had been teachers in medical schools, of whom 122 had reached professorial status. There were 7 deans, 1 president of a high school, 1 vice president of a medical school, 1 teacher in a public school and 122 members of education boards. One hundred and sixty-nine had been health officers, 108 members of boards of health, 67 coroners, 51 mayors, 31 authors, 29 members of medical examining boards, 27 bank presidents, 27 legislators, 26 pharmacists, 16 editors, 12 missionaries, 8 dentists, 7 postmasters, 4 lawyers and 3 interns. Four physicians had served with the fire department and 8 with the police department. One had been deputy collector of internal revenue, 1 city treasurer, 1 state health officer, 1 state commissioner of labor, 1 a Danish vice consul, 1 a vice consul at the Turkish capital, 1 a member of the Civil Service Board, 1 minister to Ecuador and 1 trustee of a college. Of the miscellaneous group 2 had been in the Boer War, 1 in the Boxer Rebellion, 2 in the Philippine Insurrection and 47 in the Spanish-American War. Five hundred and fifty had served during World War I, 2 each with the British navy and army, 2 with the Canadian army, 2 in the Russian imperial army and 1 each in the British Expeditionary Forces and the armies of France, Italy and Poland.

Association Officers.—Included among the decedents were 1 who had been Vice President of the American Medical Association, 1 charter member of a council, 4 chairmen of councils and 13 section officers. Thirty-four had been members of the House of Delegates and 1 Speaker of the House. There were 35 presidents of state medical societies, 4 secretaries of state societies and 216 who had been presidents of county medical societies.

Killed in Action

The 3,358 obituaries included 40 physicians who were killed in action during World War II and 128 who died while in military service. A number of those who were killed in action had first been reported missing in action. The following locations as those where injuries resulting in death occurred as noted in official reports: Asiatic area 8, Philippine Islands 7, China Sea 6, Germany 5, Pacific area 5, Italy 2, France 2 and 1 each at Formosa, Luzon, North African area, Okinawa and Tinian. Nine were reported as prisoners of war, and 1 was killed when a Japanese suicide plane crashed into an auxiliary hospital transport. Eleven died at ages between 25 and 29, 9 between 30 and 34, 13 between 35 and 39, 2 between 40 and 44, 3 between 45 and 49, 1 between 50 and 54, and 1 between 55 and 59.

Died While in Military Service

Of the 128 physicians who died while in military service, coronary thrombosis caused 19 of the 29 deaths attributed to various forms of heart disease. Airplane accidents caused 16 deaths and automobile accidents 9. Cancer was responsible for 10 deaths, 3 of which were brain tumors. The remaining deaths from miscellaneous causes included 1 from poliomyelitis, 1 from tsutsugamushi fever and 2 each from acute infectious hepatitis and spinal meningitis. One physician died following an operation, and causes were not obtained in 10 deaths. Gunshot wounds led the suicides with 8 deaths, poison 2 and illuminating gas, hanging and stab wound of the chest 1 each. Two died between the ages of 20 and 24, 17 between 25 and 29, 28 between 30 and 34, 29 between 35 and 39, 25 between 40 and 44, 10 between 45 and 49, 9 between 50 and 54, 3 between 55 and 59, 4 between 60 and 64, and 1 between 65 and 69.

Of the 5 U. S. Public Health Service officers included in the general group of 3,358 deaths, 1 aged 39 was killed in action in the China Sea, and 1 aged 37 died of avitaminosis in Japan while a prisoner of war.

The 40 deaths classified as killed in action give an average age of 35.2, while the average for the 128 who died while in military service is 42.8. Combining the two, an average of 37.7 is recorded. Deducting this group from the general total of 3,358, an average of 67.5 is reached. Caution should be exercised in the interpretation of these figures, since a number of these young physicians would have died from other causes had they remained in civilian life.

Since the outbreak of World War II on Dec. 7, 1941 The Journal has recorded the deaths of 257 physicians who were killed in action and 501 who died while in military service. Reports still being received by The Journal indicate that the aggregate total of 758 military deaths among physicians will be greatly augmented when the complete statistics are made available through official military channels.

A NEW SURVEY OF MEDICAL EDUCATION

On recommendation of the Council on Medical Education and Hospitals of the American Medical Association, the Board of Trustees has authorized a new complete survey of the medical schools. The American Medical Association will undertake the entire financial responsibility for the survey. However, a collaborative effort with the Association of American Medical Colleges and the individual colleges is planned, so that the project can achieve the end of improved medical education in this country.

Ten years have passed since the last previous complete survey was made, under the direction of H. G. Weiskotten, now chairman of the Council. In the meantime there have been tremendous impacts on the entire structure of medical education, during the troubled war years and in the present era of reconversion to peacetime education. In the light of recent advances in medical knowledge and the nature of medical care a careful reevaluation of the curriculum is needed. Financially many schools are facing a crisis, since the increased income of the war years will be drastically reduced unless supplemented by funds from endowment, state or other sources. There is need for a thoroughgoing analysis of the educational resources of our medical schools as related to student enrolments.

Much general attention has been given to the two major surveys of the past: that of Abraham Flexner nearly forty years ago, and that of H. G. Weiskotten a decade ago. Yet the program of surveying individual medical schools and assisting them to improve has gone on year after year under the auspices of the Council and the Association of American Medical Colleges. Valuable though this continuous program has been, it must be supplemented at opportune times by complete surveys of all schools.

The aim of the survey will be that which has motivated every activity of the Council in the past: to improve medical education and to render all assistance to medical schools to improve themselves, so that the quality of medical care in this country will continue to improve and the position of world leadership in medical education occupied by the schools of this country will be maintained and strengthened.

MORE NURSES NEEDED

Physicians need not be told that there is a "nurse shortage." Although more professional nurses are available today in the United States than at any time in the past, the supply has not been able to meet the demand. The National Nursing Council's Committee on Statistical Research estimates the deficit in August 1946 as 41,000.

A large proportion of this year's graduates have indicated that they expect to take hospital positions. The student nurses enrolled under the U. S. Cadet Nurse Corps program are only now beginning to reach graduation. Nevertheless the shortage of graduate nurses may prevail at least until 1949, since admissions to schools of nursing during this year have been lower than at any time in the past ten years. Only 30,899 student nurses were admitted in 1946, compared with 56,567 in 1945. Among the reasons cited are the competition of other occupations offering greater apparent satisfactions, the removal of wartime emotional and patriotic pressures, and the ending of Bolton act funds for nursing education.

The physician perhaps more than any other one person is likely to be consulted when a young woman thinks about entering the nursing profession. His aid is needed to encourage suitable candidates to enter an acceptable school of nursing. New drugs and new treatments often depend for their success on skilled nursing. A twenty-four hour span in a large hospital revealed, for instance, 58 surgical operations, 52 patients on the critical list, 12 babies born, 20 blood transfusions, 84 intravenous infusions, 141 streptomycin injections and 1,064 penicillin injections. The physicians who carry responsibility for these patients must have at their elbows professional nurses who act swiftly and intelligently.

Recent studies of the opinions of patients concerning nurses indicate that most people have high ideals of what the nurse should represent and feel more than normally injured and disappointed when she fails to measure up to them.

Employment conditions in nursing are gradually being improved as nurses, physicians and hospital administrators cooperate to secure better practices. Long hours and short pay were accepted as part of their lot by many nurses of an earlier generation. Offices, industries and public health nursing organizations which have been able to offer a more reasonable working day than some hospitals have accordingly attracted many nurses—some of them married or with domestic responsibilities—who might have preferred hospital service if the hours had been equally favorable. When hospitals have inaugurated a five day week of forty hours the shortage has become immediately lessened.

Many of the housekeeping and less skilled kinds of manual work which some nurses have done because of lack of other workers are gradually being assigned elsewhere. More practical nurses, well trained and state licensed, more orderlies, aides, ward maids and attendants are needed in the complex hospital world. Much of the distress about "nurse shortages" actually springs from a shortage of other types of personnel. The war demonstrated to physicians and nurses how much could be done, under supervision, by nurses' aides and other helpers. This is one of the conclusions formed from war experience that the medical profession will undoubtedly want to apply in civilian life. With its wider adoption, another block will be removed from the high school graduate's vision of professional nursing as a challenging occupation.

THE LABILITY OF BONE

The physical characteristics of bone are more obvious than its metabolic activity. The fact that bone is hard and rigid and appears so admirably to fulfil its mechanical functions is likely to turn attention from its capacity as a labile reservoir of mineral salts. Long before actual experimental demonstration the pathologist was aware of such abnormalities of mineralization or of decalcification as rickets, scurvy, osteitis fibrosa cystica and osteoporosis. More than a decade ago it was demonstrated[1] that restriction of experimental animals to a salt poor ration not only reduced the proportion of total bone ash but actually altered the chemical composition of the salt deposited in the growing skeleton. The mobilization of minerals from the skeleton is influenced by certain of the hormones. The thyroid hormones have been used in the removal of lead from the body after lead poisoning; the heavy metal appears to be mobilized from the bone along with the calcium phosphate with which it was deposited. Again, the hormone of the parathyroid glands has a definite effect on bone calcium; deficiency of this substance results in hypocalcemia and a resultant tetany, whereas an overproduction of the hormone produces hypercalcemia and net losses of calcium and phosphorus, which salts come from the skeleton. The estrogenic hormones bring about a pronounced shift of bone salts from the symphysis pubis[2] to the long bones in certain species,[3] with the result that the breaking strength of these leg bones is greatly increased[4] and the chemical composition of the bone salts is altered.[5] Purely physical evidence of the intense activity in the femur as a result of the administration of estrogens has recently been reported;[6] the x-ray diffractograms of sections of these bones show complete disorientation of bone salt crystals in the cortex. The same method of study has indicated that the faulty mineralization of the epiphysis in rickets is characterized by disorientation of the bone salt crystals[7] and that this abnormal structure persists after clinical healing is complete.[8] By means of a number of different chemical and physical experimental approaches it has been demonstrated that the skeleton is surprisingly labile: bone salts can be withdrawn from this reservoir under a variety of influences as well as deposited when circumstances are favorable. This fundamental concept has helped to explain certain clinical conditions and should be kept in mind in the therapeutic and nutritional approach to medical problems.

---

[1] Brooke, R. O.; Smith, A. H., and Smith, P. K.: J. Biol. Chem. **104**: 141 (Jan.) 1934. Clarke, M. F., Bassin, A. L., and Smith, A. H.: Am. J. Physiol. **115**: 556 (May) 1936.

Current Comment

CANCER TREATMENTS FROM RUSSIA

The KR treatment,[1] named after its originators Nina Klyueva and Georgi Roskin, is now being tested in the treatment of human cancer in Moscow, Russia, by Trutnev, Lyampert and Egorov. The method is said to have little effect in cancer of the skin but to show promise in cancer of the throat, uterine cervix and breast. The preparation is made from dead protozoa of the species Trypanosoma cruzi. The material is said to localize in tumors and destroy them. This line of research followed the earlier observations of Roskin that living Trypanosoma cruzi after injection could destroy tumors in mice, although the animals themselves later succumbed to the infection. From the information at hand it is not possible to determine the biologic and chemical principles involved in the preparation and use of this material. Neither can its effectiveness be judged. In a second release[2] from the Russian Embassy brief mention of another method is said to be based on observations by Besredka. He found that a certain degree of immunity sometimes developed to transplanted tumors in animals when the transplants were made intracutaneously. Krasheninnikov used the method in 2 cases of human gastric cancer and 2 in which the type of primary tumor is not stated. He excised 1 to 2 Gm. of cancer tissue, wrapped it in a piece of omentum and transplanted it under the skin of the abdomen. It is stated that the transplant resolved promptly, as did also the primary tumor. It was believed that the transplanted cancer played the role of an autovaccine. The function of the omentum, presumably, was to supply cells for the fabrication of immune bodies. It will be, of course, some time before the value of this treatment can be judged. In order to answer satisfactorily questions in regard to these methods it is hoped that authoritative scientific information will soon become available.

FOCAL INFECTION

In his presidential address to the Institute of Medicine of Chicago Dr. Ernest E. Irons[1] discussed focal infection from the time when an Assyrian physician-priest in the seventh century told his king that the constitutional ailment from which he suffered was related to infected teeth to the revival of this doctrine by Frank Billings in the period from 1912 through 1916. Earlier investigators had arrived by empirical methods at the concept of a relationship between infection in the teeth and disturbances elsewhere in the body. With the coming of our modern era of bacteriology the infecting organism could be traced from its focus in the teeth or the throat or elsewhere in the body to tissues and organs far removed. Focal infection was no longer a theory but an established process. The difficulty of determining the exact nature of the relationship between a focus of infection and chronic arthritis is obviously far greater than prevails in tracing such an infection from a tooth to the heart or the kidney. Today the desirability of finding and removing local and often symptomless infection is generally recognized. However, the removal of great numbers of teeth or operations on the nose and throat on the chance of possible relationship between infection and chronic arthritis is no longer considered a scientific procedure. True, removal of chronic infections such as alveolar and peritonsillar abscesses may result in permanent cessation of arthritic attacks, but new technics in dental care and the development of specific chemotherapy and antibiotic therapy make available other approaches to the solution of this problem. In retrospect the intensive study carried on by Dr. Frank Billings and his associates, among them conspicuously Dr. Ernest Irons, produced not only observations of great importance in modern diagnosis and therapy but also concepts and procedures of significance in the control of other diseases. Among the chief of these by-products is the more careful examination of patients. Today the concept of focal infection has been integrated into the practice of medicine. One speaks no longer of the theory of focal infection; one recognizes focal infection as a definite pathologic condition requiring scientific diagnosis and treatment.

---

[2] Gardner, W. U.: Am. J. Anat. **59**: 459 (Sept.) 1936.

[3] Gardner, W. U., and Pfeiffer, C. A.: Proc. Soc. Exper. Biol & Med. **37**: 678, 1938. Day, H. G., and Follis, R. H. Jr.: Endocrinology **28**: 83 (Jan.) 1941.

[4] Gardner, W. U.: Proc. Soc. Exper. Biol. & Med. **45**: 230 (Oct.) 1940.

[5] Wentworth, J. H.; Smith, P. K., and Gardner, W. U.: Endocrinology **26**: 61 (Jan.) 1940.

[6] Reed, C. I.; Reed, B. P., and Gardner, W. U.: Endocrinology **38**: 238 1946.

[7] Reed, C. I., and Reed, B. P.: Am. J. Physiol. **138**: 34 (Dec.) 1942.

[8] Reed, C. I., and Reed, B. P.: Am. J. Physiol. **143**: 413 (March) 1945.

[1] U. S. S. R. Information Bull. **6**: 2 (Oct. 23) 1946.

[2] Ibid. **6**: 12 (Oct. 23) 1946.

[1] Irons, E. E.: The Theory of Focal Infection: Its Influence on the Practice of Medicine, Proc. Inst. Med. Chicago **16**: 265 (Dec. 15) 1946.

ORGANIZATION SECTION

Washington Letter

(From a Special Correspondent)

Jan. 6, 1947.

Need for Clarifying Lobbying Provisions of Reorganization Act

Provisions of the Reorganization Act may have to be amended by the 80th Congress to clarify the lobbying provisions. Already 205 individuals or organizations have registered, but many others have written to House and Senate officials to determine whether or not they should register. One lawyer suggested that a lobbyist should be defined as a person who approaches individual congressmen to enlist their support for or against pending bills. Parliamentary experts state that they did not believe that the lobbying provisions of the registration bill covered people whose only congressional activities involved testimony before committees, but they added that the provisions were not clear.

Penicillin Removed From All Distribution Control

The Civilian Production Administration has announced that penicillin has been freed from all distribution control. This action was taken because production is now adequate for all domestic and export requirements. Production reached 2.7 trillion Oxford units in October, compared with 675 billion units in October 1945 and 230 billion units in October 1944. Higher production was attributed to introduction of a new mold strain. The drug has been under some degree of control ever since 80 per cent of the meager initial output was first channeled to the armed forces in July 1943.

Army and Navy Merge Their Drive Against Vice

Although merger of the armed forces, which President Truman is expected to seek in the 80th Congress, still encounters opposition, the Army and Navy have joined hands in the "reduction and suppression of conditions inimical to the morals and welfare of service personnel." The objective of this merged activity will be to carry out the eight point program for the "repression of prostitution" in and around military establishments decided on last April.

Dr. James L. Hall to Resume Private Practice

Dr. James L. Hall, superintendent of Freedman's Hospital, has resigned to return to Chicago to resume private practice. Before coming to Washington in 1940 as professor of medicine at Howard University College of Medicine and chief of staff at Freedmen's, Dr. Hall had occupied positions on the staff of the Chicago Free Dispensary, Provident Hospital, Chicago, and as director of the Max Epstein Clinic.

Coming Medical Meetings

Annual Congress on Medical Education and Licensure, Chicago, Palmer House, Feb. 10-11. Dr. Victor Johnson, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Orthopedic Surgeons, Chicago, Jan. 25-30. Dr. Myron O. Henry, 825 Nicollet Ave., Minneapolis, Secretary.

Central Surgical Association, Chicago, Feb. 20-22. Dr. Walter G. Maddock, 250 East Superior St., Chicago, Secretary.

Chicago Medical Society Annual Clinical Conference, Chicago, March 4-7. Dr. Willard O. Thompson, 30 N. Michigan Blvd., Chicago 2, Secretary.

Mid-South Postgraduate Medical Assembly, Memphis, Tenn., Feb. 11-14. Dr. Arthur F. Cooper, 1479 Carr Ave., Memphis, Secretary.

New Orleans Graduate Medical Assembly, New Orleans, Feb. 24-27. Dr. Max M. Green, 1430 Tulane Avenue, New Orleans 13, Secretary.

Pacific Coast Surgical Association, Seattle, Feb. 17-18; Victoria, B. C., Feb. 19-21. Dr. F. L. Reichert, Stanford University Hospital, San Francisco, Secretary.

Southeastern Allergy Association, Atlanta, Ga., Jan. 18-19. Dr. Katharine B. MacInnis, 1515 Bull St., Columbia 49, S. C., Secretary.

Council on Medical Service

SEAL OF ACCEPTANCE—COUNCIL ON MEDICAL SERVICE

At the last meeting of the members of the Council on Medical Service, the Council's Seal of Acceptance was granted to Louisiana Physicians Service, Inc., New Orleans; New Hampshire-Vermont Physicians Service, Concord, N. H., and the twenty-three member bureaus of the Washington State Medical Bureau. Final action on six additional applications was postponed. This brings to fifty-two the number of plans granted the right to use the seal.

Louisiana Physicians Service, Inc., is a statewide plan sponsored by the Louisiana State Medical Society with offices in the Tulane Building, New Orleans. Mr. Frank Lais Jr. is the executive director.

New Hampshire-Vermont Physicians Service is the result of the merging of New Hampshire Physicians Service, Concord, N. H., with Vermont Physicians Service, Rutland, Vt. The executive offices are located at Concord and the Executive Director is Mr. R. S. Spaulding. This is the first plan sponsored by the medical profession which covers the population of the two states under a single administrative office.

The twenty-three member bureaus of the Washington State Bureau are: Chelan County Medical Service Corporation, Wenatchee; Clallam County Medical Service, Corporation, Port Angeles; Clark County Medical Service Corporation, Vancouver; Columbia Medical Service Corporation, Pasco; Cowlitz County Medical Service Corporation, Longview; Grant County Medical Service Corporation, Coulee Dam; Grays Harbor County Medical Service Corporation, Aberdeen; Jefferson County Medical Service Corporation, Port Townsend; King County Medical Service Corporation, Seattle; Kitsap County Medical-Dental Business Bureau, Bremerton; Kittitas County Medical Service Corporation, Ellensburg; Lewis County Medical Service Corporation, Chehalis; Mason County Medical Service Corporation, Shelton; Okanogan County Medical Service Corporation, Okanogan; Pacific County Medical Service Corporation, Raymond; Pierce County Industrial Medical Bureau, Tacoma; Skagit County Medical Bureau, Mount Vernon; Snohomish County Physicians Corporation, Everett; Medical Service Corporation of Spokane County, Spokane; Thurston County Medical Service Corporation, Olympia; Walla Walla Valley Medical Service Corporation, Walla Walla; Physicians and Dentists, Inc., Bellingham, and Yakima Medical Service Association, Yakima.

The standards under which a plan is granted the Seal of Acceptance require that it must first have the approval of the state medical society or, if local, it must be approved by the local medical society in the area in which it operates. The members of the medical profession must assume responsibility for the medical services included in the benefits. The plan should have no regulation which restricts free choice of a qualified doctor of medicine who is practicing in the locality covered by the plan and who is willing to give service under the conditions established. The method of giving the service must retain the personal, confidential relationship between the patient and the physician. These and other qualifications must be met by plans seeking the right to use the Council's seal.

Of special interest regarding prepayment medical care plans on a nationwide basis is the fact that many firms with a large number of employees have expressed a desire to deal exclusively with plans which merit the Council's Seal of Acceptance.

GOVERNMENT SERVICES

VETERANS ADMINISTRATION

ADDITIONAL TRAINING UNDER THE VOCATIONAL REHABILITATION ACT

Some disabled veterans who need more than four years of training to reach their occupational objectives may be able to take additional training under the Vocational Rehabilitation Act. The Veterans Administration states that veterans so severely disabled that no course of training will restore them to employability in four years, and those who lose time in their courses because of their health or other personal circumstances beyond their control, are expected to be helped by this ruling. Provision also has been made for disabled veterans who started preprofessional courses before the war and who have since proved their suitability for their chosen profession but who still must have more than four years to prepare for it.

The ruling does not apply to any veterans in training under the G. I. bill whose eligibility is based on their length of service up to a maximum of forty-eight months of training. It will not affect the majority of disabled veterans enrolled under the Vocational Rehabilitation Act but only those in special circumstances.

Under this act the Veterans Administration is responsible for studying and testing the disabled veteran and helping him select an employment objective which is in line with his skill and suitable to his disability. The Veterans Administration then is responsible for planning and enrolling him in a course of rehabilitation training that will enable him to reach his objective and become employable, generally within the four year limit. VA pays tuition and fees, provides books and supplies and pays a subsistence allowance to give the disabled veteran a living income until he is employable again.

A disabled veteran who is found suited to a professional field such as medicine must have background and experience to show he had planned to go into that line and must have satisfactorily completed premedical courses before he became a veteran with sufficiently high grades to promise acceptance by a medical school. He must also show high promise of success in the field. If he meets these qualifications, the Veterans Administration may give him five years, or even more, of training under the Vocational Rehabilitation Act.

The way further has been left open for some veterans who cannot fill all those qualifications but want to keep their chosen objectives by taking part of their training at their own expense. If their background and experience indicate that they are qualified, the Veterans Administration may let them pay their own way long enough so that when they finally enroll under the Vocational Rehabilitation Act they have only four years or less to finish the course. VA warns, however, that the veteran who chooses this plan runs a danger, for if his physical condition changes materially while he is studying at his own expense he may no longer be in need of vocational rehabilitation when he wants it. Final decision for courses of more than four years rests with each VA regional manager acting on the written recommendation of a committee of his vocational rehabilitation, education and guidance specialists.

ENCEPHALOGRAPHY—TECHNICIANS NEEDED

The Veterans Administration has inaugurated a comprehensive program to train physicians and technicians in electroencephalography. The program is under the supervision of Dr. Frederic A. Gibbs of the University of Illinois. Training courses in this work up to two and one-half months, depending on previous experience, are being offered. Physicians interested in becoming associated with the Veterans Administration to train for this work may be detailed at once to the training course. This program is one of three nationwide programs now under way to implement existing specialists in the neuropsychiatry department. The other programs are in epilepsy and aphasia.

Technicians are given courses averaging six weeks at the Neuropsychiatric Institute of the University of Illinois, Chicago, and at the Veterans Administration Hospital, Hines, Ill. The courses for technicians are designed to equip them in the skill of using and maintaining standard instruments and to give them a basic understanding of encephalography. Basic salaries of technicians range from $2,168 to $2,394 a year, depending on experience. Dr. Paul R. Hawley, chief medical officer of the Veterans Administration, says that the positions for technicians are open to both men and women with or without experience.

Electroencephalography machines will be installed in all Veterans Administration hospitals of 1,000 beds or more and in the larger Veterans Administration mental hygiene clinics. Applicants for any of these positions should apply to the nearest Veterans Administration office.

ARMY OFFICERS LENT TO VETERANS ADMINISTRATION

The Army has taken constructive steps to give actual assistance to the veteran. In an address before the National Conference of Veterans Affairs, Washington, D. C., December 5, Secretary of War Robert P. Patterson said "To the Veterans Administration we have loaned as its chief one of our ablest officers, General Bradley, and we have made available other army officers to assist him. Today, in addition, there are more than eleven hundred army medical officers assigned to the Veterans Administration, as well as a small group of army doctors and nurses manning one Veterans Administration hospital until a VA staff can take over. So far we have turned over to the Veterans Administration twenty-four army hospitals, in most instances complete down to the last pair of slippers and dressing gown for the patients and to the last scalpel for the surgeon."

100,000 VETERANS' HOSPITAL BEDS

Authorized hospital capacity of the Veterans Administration has passed the 100,000 bed mark for the first time. The new record was set with the acquisition of six more army and navy hospitals in the program to provide beds for the increasing number of veterans who need hospitalization while VA's hospital construction project is in progress. The six recently acquired service hospitals are Cushing General, Framingham, Mass.; Fort Logan, Colo.; Billings General, Fort Harrison, Ind.; Newton D. Baker, Martinsburg, W. Va.; Moore General, Swannanoa, N. C., and the naval hospital at San Juan, Puerto Rico.

JEFFERSON BARRACKS HOSPITAL

Army engineers have awarded the architect-engineer contract for the Veterans Administration hospital at Jefferson Barracks, Missouri. The present hospital is a 597 bed general medical and surgical center, which, under the plans of the Veterans Administration, will be converted to a neuropsychiatric hospital and an additional 500 beds will be added.

PERSONAL

Dr. Charles W. Mayo of the Mayo Clinic, Rochester, Minn., has been appointed chairman of a special advisory group on the overall medical care for veterans. The group was appointed in compliance with public law 293, 79th Congress.

NAVY

RESERVE OFFICERS MAY RETURN TO ACTIVE DUTY

The Bureau of Medicine and Surgery has been authorized to recall to active duty, on a voluntary basis, reserve medical and dental officers now on inactive duty pending final action on applications for appointment to the Medical Corps of the regular Navy. Officers who volunteer will remain on active duty until such final action is taken on their applications. Under present regulations those officers are ineligible to apply for appointment to the regular Navy after the expiration of six months in an inactive duty status. By returning to active duty, reserve officers of the Medical and Dental Corps who have been in an inactive status beyond the six month limitation may regain their eligibility to file application for appointment to the regular Navy. Additional information on the procedure to be followed in applying for recall to duty may be obtained from the Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C.

TWO HUNDRED RESERVE NURSES NEEDED NOW

The Bureau of Medicine and Surgery announced the immediate need for the return to duty of 200 Naval Reserve nurses now on inactive duty. Volunteers, who will be required to serve for a minimum of one year, will be returned to active duty with the same rank as that held at the time they became inactive. As a result of demobilization the nursing staffs at naval hospitals have been sharply reduced while the number of patients has remained substantially the same during the past several months. The services of 200 additional nurses are considered necessary to meet the problem for the next year. All inactive members of the Naval Reserve Nurse Corps interested in returning to duty are urged to apply as soon as possible to the Superintendent of the Nurse Corps, Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C.

SIX PROMOTIONS TO REAR ADMIRAL

President Truman has approved the recommendations of the Navy selection board for the promotion of six medical corps officers to the rank of Rear Admiral. The medical officers recommended for promotion are: Morton D. Willcutts, Assistant Chief of the Bureau of Medicine and Surgery for Professional and Personnel Operations; Clarence J. Brown, Medical Officer in Command, Naval Hospital, St. Albans, N. Y.; Arthur H. Dearing, Medical Officer in Command, Naval Hospital, Oakland, Calif.; Paul M. Albright, Medical Officer in Command, Naval Hospital, Corona, Calif.; John C. Adams, Chief of Aviation Medicine Division, Bureau of Medicine and Surgery, and Carlton L. Andrus, Chief of Planning Division, Bureau of Medicine and Surgery.

NEW ORLEANS NAVAL HOSPITAL CLOSES

The U. S. Naval Hospital at New Orleans was disestablished as of November 15 on becoming surplus to the needs of the Bureau of Medicine and Surgery. It is said that consideration is being given to the transfer of this facility to the Veterans Administration.

PUBLIC HEALTH SERVICE

EXAMINATIONS FOR PUBLIC HEALTH SERVICE APPOINTMENTS

Examinations will be held early in 1947 for appointment to the Regular Corps of the United States Public Health Service. Seventy-five vacancies exist in grades of assistant and senior assistant scientist. Written examinations covering each candidate's particular field as well as related fields will be held April 14 and 15 at places mutually convenient to the applicant and the service. Oral examinations will be held February 13-April 9 in thirty cities throughout the United States.

Commissions are available to scientists trained in any of the following fields: bacteriology, mycology, parasitology, entomology, malacology, biology, chemistry, physiology, physics, statistics and psychologists and to milk and food specialists. Assignments will be in line with the individual's demonstrated ability and experience.

An applicant for the grade of assistant scientist must be a citizen of the United States, have had seven years of educational and professional training or experience, possess a certificate or diploma from an institution of recognized standing and be able to pass a physical examination given by a medical officer of the United States Public Health Service. The same requirements, plus an additional four years of training or experience, apply to those seeking the grade of senior assistant scientist.

Commissioned officers in the Regular Corps enjoy the same benefits and privileges as do officers of the Army, Navy or Marine Corps. The grade of assistant scientist is equal to that of first lieutenant in the Army. Annual pay, with allowance, for dependents, is $3,811. A senior assistant scientist ranks with a captain of the Army and draws, with allowances for dependents, $4,351 a year.

Public Health Service officers are entitled to full medical care and hospitalization for themselves and their families, including disability retirement at three-fourth's base pay. They receive thirty days' annual leave with pay. Periodic promotions are based on length of service and merit. The retirement age is 64.

Application forms may be obtained by writing the Surgeon General, Public Health Service, Washington 25, D. C.

MISCELLANEOUS

SALE OF SURPLUS SURGICAL SUTURES

Nationwide offerings of surplus surgical sutures on a sealed bid basis are being arranged by regions having large inventories, the War Assets Administration has announced. Various quantities of surgical sutures of all types, which were acquired by the government at a cost of about $3,500,000, will be offered to all buyers by War Assets Administration regional offices. Seven offices—Atlanta, Cincinnati, Denver, New York, Richmond, San Francisco and St. Louis—have been authorized to offer their entire inventories of sutures for sale at once. In addition, smaller quantities, which are stored in various other regions, will be combined to make up one or more additional offerings.

The surgical sutures are being segregated into three lots before being offered: (1) sutures made by Davis and Geck, Inc.; (2) those made by Johnson and Johnson, and (3) those made by all other manufacturers. Bids will be accepted on any one of the lots, any combination of lots or all three lots. Bids must be accompanied by a deposit of 10 per cent of the bid. Buyers must sign a contract to clear with the Food and Drug Administration before resale to assure that these sutures meet requirements of the Federal Food, Drug and Cosmetic Act.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education and public health.)

CALIFORNIA

Organize Graduate School of Medicine.—The College of Medical Evangelists, Loma Linda-Los Angeles, announces the organization of a graduate school of medicine giving courses on the graduate level and featuring the basic sciences as related to the major clinical specialties. The second course in the basic studies relating to surgery is now in progress. Nine month courses are also being offered in internal medicine and in obstetrics and gynecology. These basic science courses are planned primarily for physicians who are working toward certification by their respective American specialty boards.

Civil Service Examinations.—The California State Personnel Board has announced examinations for two state civil service positions. The examination for the first, chief, bureau of clinic diseases, will be February 1. Final date for filing application is January 30. The chief of the bureau, under administrative direction, plans, organizes, coordinates and directs the work of the staff of the bureau of chronic diseases in a program for prevention and control and for the study of public health aspects of chronic diseases, directs and interprets investigative projects, consults and advises provisional and local groups concerning programs for prevention of chronic diseases and addresses interested groups and prepares articles for publication. The salary range is from $535 to $655. The second position is that of senior public health analyst, with salary ranging from $280 to $340. The examination date is February 27 and the final date for filing application is February 6. The position does not call for a medical degree but for an education equivalent to graduation from college with courses in statistics. The senior public health analyst, under general direction, plans and supervises the work of junior public health analysts engaged in checking, tabulating, analyzing and interpreting morbidity and mortality data from public health records and in making other studies and health surveys. He assists in coordinating statistical activities and other procedures of the department of public health and also designs questionnaires. California residency is not required.

COLORADO

Personal.—Dr. Phineas J. Sparer, recently released from military service, has been named superintendent of the Sanatorium of the Jewish Consumptives Relief Society, Denver, which he has been serving as medical director.

Eastern Colorado Meeting.—At the regular meeting of the Eastern Colorado Medical Society in Burlington December 2, Dr. Edgar Durbin, Denver, gave a paper on "Shortcomings in Cardiac Diagnosis and Treatment"; Dr. Walter Kozak, Vandergrift, Pa., on "Urinalysis," and Dr. Harold M. Hayes, Burlington, on "Sedimentation Rate."

ILLINOIS

Record Birth Registration.—The Illinois Department of Health announced on December 20 a record breaking registration of live births in the third quarter of 1946 with 45,040 certificates filed. This number is 5,600 over the highest third quarter ever before recorded in Illinois. Births for the first nine months total 111,697 as compared with the 1945 figure of 98,204. Deaths associated with child bearing are at an all time low. Thus far a decrease of 15 per cent over the maternal death rate of 1945 has been recorded.

The Seventh Cancer Diagnostic Clinic.—The state director of public health, Dr. Roland R. Cross, has announced that a new state aided cancer diagnostic clinic was opened December 18 at the Marshall Browning Hospital of DuQuoin and that it was made possible through the cooperation of the Perry County Medical Society, the state department of health and the hospital authorities. This is the seventh to be established in the state, the others being in Chicago, Evanston, East St. Louis, Champaign, Rockford and Springfield. The purpose of these clinics is to provide expert assistance in the detection of cancer in its early stages. Each clinic is staffed by physicians qualified in the fields of surgery, internal medicine, x-ray and pathology.

Chicago

New Manager Takes Charge of World's Largest General Hospital.—Mr. Fred A. Hertwig on January 2 became warden of the Cook County Hospital, Chicago, succeeding Gen. Manus McCloskey. Among those present at the ceremony were William N. Erickson, president of the county board, and Dr. Karl A. Meyer, medical superintendent of county institutions. Mr. Hertwig, 48, previously was for many years manager of a hotel in Evanston.

Sanford R. Gifford Memorial Lecture.—The third annual Sanford R. Gifford Memorial Lecture will be presented under the auspices of the Chicago Ophthalmological Society on Monday, January 20, at the John B. Murphy Memorial Auditorium of the American College of Surgeons, 54 East Erie Street. Dr. Frederick C. Cordes, professor of ophthalmology, University of California Medical School, Berkeley-San Francisco, will present the lecture, which will be on "Types of Congenital Cataract."

Chicago Medical Society.—At the next meeting of the Chicago Medical Society, January 15, at the John B. Murphy Memorial Auditorium on East Erie Street, Dr. Willard M. Allen, professor of obstetrics and gynecology and head of the department, Washington University School of Medicine, St. Louis, will discuss "Functional Uterine Bleeding" and Dr. Laurence Randall, head of the section of obstetrics and gynecology, Mayo Clinic, Rochester, Minn., "Diagnosis and Treatment of Amenorrhea in Young Women."

Institute of Medicine.—Presentations by fellows of the Institute of Medicine of Chicago on recent contributions and current thought in the basic sciences and various branches of clinical medicine began January 10. Subsequent meetings will be held on the second and fourth Friday evenings of each month at the assembly room of the institute. They will be open without fee to all physicians and allied professional groups. Dr. Alvah L. Newcomb, associate in pediatrics, Northwestern University Medical School, and associate attending pediatrician, Children's Memorial Hospital, will open the series. His subject will be "Juvenile Diabetes."

INDIANA

Cancer Research.—Grants totaling $10,500 have been given to Indiana investigators by the American Cancer Society for projects in research on cancer, including among others two projects on mutations as they relate to cancer.

Personal.—Dr. Floyd T. Romberger, Lafayette, president of the Indiana Medical Society, addressed the sisters of St. Francis and the medical staff of St. Elizabeth Hospital, Lafayette, December 3.——Dr. Bert E. Ellis has been made president-elect of the Indianapolis Medical Society.——Dr. Charles E. Holland, Bloomington, has been appointed full time physician for the athletic team of Indiana University.

Countywide X-Ray Service.—The Lake County Tuberculosis Association and the James O. Parramore Hospital in connection with the Lake County Medical Society are conducting a countywide chest x-ray program. A new mobile x-ray unit has been purchased, and equipment will be installed in various communities in the county. Members of various groups in the county have been invited to appear for roentgenologic examination.

MISSOURI

Advisory Board to Los Alamos Project.—The Washington University School of Medicine, St. Louis, has concluded an agreement to advise on the health service and research carried on at the Los Alamos Project, Santa Fe, N. M., Charles Belknap, vice chancellor, Washington University, has announced. The medical advisory board consists of Dr. Philip Shaffer, distinguished service professor of biologic chemistry; Dr. Carl B. Moore, professor of internal medicine; Dr. Frank R. Bradley, director of Barnes Hospital; Dr. Otto Brandhorst, dean of the school of dentistry; Dr. Nathan Womack, associate professor of clinical surgery; Dr. James Nolan, assistant professor of obstetrics and gynecology, and Dr. Robert A. Moore, acting dean of the school of medicine. Dr. Norris Bradbury, Los Alamos Project director, and Col. Herbert Gee, commanding officer of the post, are ex officio members. The board will make recommendations for professional staff appointments on the medical service at Los Alamos. Other staff members of the school of medicine will be available for consultation to these groups. In return, some of the facilities of the Los Alamos Project will be available to qualified staff members of the school of medicine for research.

NEW YORK

Licenses Revoked.—The New York State Board of Medical Examiners has reported the following revocations of licenses, according to *Health News:*

Celano, Frank, 351 Madison Street, Westbury. Medical license issued through indorsement of his Maryland medical license and permitting him to practice medicine in the state of New York revoked, annulled and canceled as of Oct. 28, 1946.

Steuart, Frederick Charles, Sag Harbor, Long Island. Medical license to practice in the state of New York revoked, annulled and canceled as of Oct. 29, 1946.

Dr. Chant Goes to Johns Hopkins.—The board of health of Middletown recently gave a dinner to Dr. Harry L. Chant, state district health officer of Middletown, who is leaving the state service to become associate professor of public health at Johns Hopkins University, Baltimore. Dr. Chant graduated from the University of Buffalo School of Medicine in 1928, interned at St. Lukes Hospital Association, Jacksonville, Fla., and was resident physician at Buffalo City Hospital from 1929 to 1931.

Personal.—Dr. Jere J. McEvilly, Little Falls, has been appointed health officer of Little Falls to succeed Dr. Augustus B. Santry, who held the office for twenty-two years.——Dr. Charles A. Gordon, Brooklyn, has been appointed professor and head of the department of obstetrics and gynecology at the Long Island College of Medicine, Brooklyn, succeeding Dr. Alfred C. Beck, who retired after more than thirty years' service to the college.——Dr. Clark G. Rossman, Hudson, was guest of honor at a dinner, Sept. 25, 1946, given by the Columbia County Medical Society to mark his completion of fifty years in the practice of medicine.——Dr. John K. Miller, Albany, has been appointed associate director of the division of laboratories and research of the New York State Department of Health to succeed Dr. Mary B. Kirkbride, who retired July 1.——Dr. George Baehr was reelected president of the New York Academy of Medicine for a term of two years December 5.——Dr. James L. McCartney, Garden City, has been appointed consulting psychiatrist for the Great Neck Public Schools. Dr. McCartney, a veteran of the recent war, was for several years chief of the Division of Mental Hygiene of the State Department of Health, Connecticut.

New York City

Geriatrics Research Laboratory.—The city's first research laboratory devoted wholly to the study of geriatrics opened January 1 at the Brooklyn Hebrew Home and Hospital for Aged. It will be under the direction of the hospital's medical staff. The laboratories at the home and hospital were created by the Dora Brenner Research Fund.

New Society of Neurosurgery.—Twenty-four neurosurgeons who practice in the metropolitan area have recently formed the New York Society of Neurosurgeons. The organization is an outgrowth of a group of New York neurosurgeons who have been meeting informally at regular intervals since 1939. Dr. J. Lawrence Pool is president and Dr. Sidney W. Gross secretary.

Fourth Harvey Lecture.—Dr. Isaac Starr, professor of therapeutic research and dean of the medical faculty, University of Pennsylvania School of Medicine, will deliver the Fourth Harvey Lecture of the current series at the New York Academy of Medicine, New York, on January 16. Dr. Starr will speak on "The Ballistocardiograph: An Instrument for Clinical Research and Routine Clinical Diagnosis."

Anniversary of Health Department.—The eightieth anniversary of the foundation of the New York City Department of Health was celebrated at the Academy of Medicine, Nov. 6, 1946, when Dr. Israel Weinstein, city health commissioner, spoke on "Eighty Years of Public Health in New York City" and Dr. Harry S. Mustard, director, Columbia University School of Public Health, on the part which medical organizations and voluntary health agencies played in developing the activities of the health department.

Vaccination Required for All Dogs.—To stop the spread of rabies through the city the board of health decided early in December to require by law the vaccination of all dogs in the city. An amendment to the sanitary code would make it a misdemeanor to keep a dog unvaccinated against rabies, and violation of the amendment would be punishable by a $500 fine or imprisonment up to one year or both. Enforcement of the new amendment in the case of 300,000 licensed dogs in the city will be comparatively easy by merely requiring proof of vaccination to get a dog license. The spread of rabies has forced the board of health to put Queens, Brooklyn and Richmond under dog quarantine, and Health Commissioner Israel Weinstein believes that "it is only a question of time before infection will spread to Manhattan and the Bronx."

OHIO

Studies in Tropical Diseases.—The department of pharmacology, Western Reserve University School of Medicine, Cleveland, had received a grant of $16,500 from the United States Public Health Service to continue studies on tropical diseases begun during the war in that department.

Professor of Psychiatry Appointed.—Dr. Maurice Levine has been appointed professor and head of the department of psychiatry in the University of Cincinnati College of Medicine, according to Dr. Stanley Dorst, dean of the college. He will also be director of the psychiatry service of the Cincinnati General Hospital. Dr. Levine was an instructor in psychiatry at the Phipps Clinic, Johns Hopkins from 1929 to 1932 and a student of the Chicago Institute for Psychoanalysis from 1932 to 1936. He is a training analyst and a member of the faculty of the Chicago institute. He is also author of the book "Psychotherapy in Medical Practice."

PENNSYLVANIA

Establish Central Tuberculosis Register.—A chest x-ray survey of persons 15 years of age and over who live in Erie City and County reached the 80,000 figure Dec. 1, 1946. The survey is being participated in by the Erie County Health and Tuberculosis Association, the state department of health, the county medical society and official, voluntary, business and welfare organizations. At the annual dinner meeting of the Erie County Health and Tuberculosis Association, November 12, Dr. Edward Chamberlain, professor of radiology and roentgenology, Temple University School of Medicine, Philadelphia, emphasized the importance of thorough follow-up of findings coming out of the survey. Other features of the county's vigorous program include the establishment of a central tuberculosis case register, employment of a Negro health education worker, placing x-ray units in the two general hospitals in Erie and considerable improvement in the health education program.

VIRGINIA

Dr. Newbill Named Superintendent of Sanatorium.—Dr. Hugh Page Newbill took charge of DeJarnette Sanatorium, Staunton, January 1, succeeding Dr. J. S. DeJarnette, resigned. Dr. Newbill was assistant professor of neurology and psychiatry at the University of Virginia School of Medicine and was associated with the Davis Clinic of the University of Virginia Hospital at the time of his appointment.

Changes in Health Officers.—The State Department of Health of Virginia announced the appointment of Drs. J. C. Neale Jr., Norfolk, formerly assistant director of local health services, appointed director of local health services as of Nov. 1, 1946; Peyton M. Chichester, Abingdon, formerly assistant director of local health services, appointed acting director of the bureau of crippled children and tuberculosis outpatient service as of November 1; Jack B. Porterfield, Richmond, appointed assistant director of local health services as of November 1, and William A. Browne, Richmond, appointed director of communicable disease control as of December 1.

WEST VIRGINIA

Personal.—Dr. Norman L. Cardey, formerly of Winona, who served in the Army Medical Corps for over five years and was released from service in September 1946, is now serving a residency in surgery at the California Hospital in Los Angeles.

Diet Cards Available.—Nutritional feeding cards are being distributed by the state health department and the state nutrition committee for the use of physicians interested in infant and child feeding. The form adopted was recommended by a committee appointed by the state nutrition committee at a meeting early last year. According to Miss M. E. Ingoldsby, president of the state nutrition committee, the cards are being printed and distributed to meet the demand of physicians who desire to give them to their patients.

Cancer Research Funds Allotted.—West Virginia will receive between $20,000 and $30,000 for cancer control activities from a special appropriation of $2,500,000 now being distributed by the U. S. Public Health Service. The appropriation made during the closing days of the last session of

Congress is being allocated to the various states on the basis of population and need. The amount of federal funds received by West Virginia will augment the state appropriation of $50,000 for the division of cancer control of the state health department. It will be used for furtherance of the educational program and aid in the establishment of tumor clinics and tissue diagnostic service for needy cancer patients and for the care of needy cancer patients if the prognosis is good. Federal funds will not be used for palliation or for terminal care of advanced cancer patients. The receipt of federal funds has provided for the expansion of the overall cancer program in this state. It has enabled the division of cancer control to authorize limited diagnostic studies in suspected cancer patients and increase active treatment for needy patients.

CANAL ZONE

Canal Zone Medical Society.—At the December meeting of the Medical Association of the Isthmian Canal Zone the following program was presented: Dr. Jesse C. Ellington, Ancon, "Revaccination as an Index of Immunity to Smallpox," and Dr. J. E. Elmendorf, New York, "A Preliminary Report on Field Experiments to Demonstrate Effectiveness of Various Methods of Malaria Control" (with slides).

GENERAL

Conference on Epilepsy.—The Association for Research in Nervous and Mental Disease joined the International League Against Epilepsy for the twenty-sixth annual meeting December 13 at the Hotel Waldorf-Astoria, New York. The subject of the conference was epilepsy. Dr. William G. Lennox, Boston, was chairman of the program committee.

Campaign for Funds to Fight Poliomyelitis.—The annual "March of Dimes" campaign conducted by the National Foundation For Infantile Paralysis to raise funds to continue the fight against epidemic poliomyelitis will be conducted throughout the country January 15-30. More than 1,000 radio stations will participate in the campaign, and various other means of bringing to the public the importance of this work have been organized.

American Academy of Allergy.—At the meeting of the American Academy of Allergy held in New York City November 25 to 27 the following officers were elected for the ensuing year: Dr. Will Cook Spain, New York, president; Dr. Karl D. Figley, Toledo, Ohio, vice president; Dr. Theodore L. Squier, Milwaukee, secretary, and Dr. Leo H. Criep, Pittsburgh, treasurer. One hundred and forty-four new members were elected. The academy at present consists of one hundred and seventy-one fellows and three hundred and forty-one members. The next meeting will be held in St. Louis December 15 to 17.

American Society of Electroencephalography.—The Eastern Association of Electroencephalographers last June requested representatives of the American Physiological Society, American Neurological Association, American Psychiatric Association and American Medical Association to form a council of seven members for the purpose of organizing the American Society of Electroencephalography. The council met in December 1946 in Boston and formed the American Society of Electroencephalography, with Herbert H. Jasper, Sc.D., Montreal, Canada, president; Dr. Frederick A. Gibbs, Chicago, vice president, and Dr. Robert S. Schwab, Boston, secretary.

Diabetes Association Aids Research.—An invitation to apply for funds to aid research in clinical and experimental diabetes is extended to medical graduates and workers in allied fields by the New York Diabetes Association. An application for the grant should contain a description of the project and the name of the laboratory or individual under whose guidance the work will be done and should have the approval of the head of the department in which the work is to be done. Applications should be filed on or before February 15 with Dr. Edward Tolstoi, chairman, Committee on Research, New York Diabetes Association, Inc., 2 East 103d Street, New York 29.

Frank Calderone Heads Commission of World Health Organization.—The Interim Commission of the World Health Organization, a special agency of the United Nations, has announced the appointment of Dr. Frank A. Calderone as director of its headquarters office being established in the Empire State Building, New York City. Dr. Calderone is a graduate of New York University College of Medicine, where he also taught pharmacology and preventive medicine. He received a degree in public health from the School of Hygiene, Johns Hopkins University, is a member of the New York County Medical Society, the Harvey Society, Alpha Omega Alpha and the American Public Health Association. He was with the New York City Health Department for ten years.

Meeting of Parasitologists.—The twenty-first annual meeting of the American Society of Parasitologists was held Dec. 26 to 28, 1946 at Harvard Medical School and also at the Statler Hotel, Boston. Among numerous papers read at the meeting were the following: The Occurrence of Small Strains of Endameba Histolytica in the Chicago Area; Studies on the Life Cycle and Viability of Leishmania Tropica; A Symposium on Trichomonas, and Methods of Testing Fabrics and Ointments to Determine Their Effectiveness as Barriers to Schistosome Cercariae. One afternoon was devoted to demonstrations and motion pictures on Sandfly Control and Schistosomiasis. The presidential address, entitled "This Wormy World," was delivered by Norman L. Stoll of the Rockefeller Institute for Medical Research, Princeton, N. J.

American Foundation for High Blood Pressure.—Creation of the American Foundation for High Blood Pressure to support and develop research in the field of high blood pressure and arteriosclerosis has been announced by Alva Bradley, chairman. Donald E. Hagaman, Cleveland, will take office in February as executive secretary. The board of scientific directors has been drawn from specialists in cardiovascular disease from the entire country. Funds raised on a national scale to finance research in the cause and cure of high blood pressure in American medical colleges, medical centers and hospitals is the objective of the foundation. Cost of the administration of the program has already been financed on a three year basis. While high blood pressure and arteriosclerosis account for a fourth of the deaths above the age of 40, funds for research have ranked at the bottom of the list among those available for research into major causes of incapacity and death, Mr. Bradley said.

Psychiatric Personnel Placement Service.—The activities of the Psychiatric Personnel Placement Service, jointly operated for the past year as an emergency placement program by the American Psychiatric Association and the National Committee for Mental Hygiene, have been taken over by the latter organization, 1790 Broadway, New York 19. Physicians seeking placement in positions or training in the field of psychiatry may still apply. Over nine hundred physicians have registered in the placement service since it began operating Dec. 11, 1945 for the purpose of giving advice and assistance to physicians in the armed forces who were interested in obtaining further training or to physicians in psychiatry on their return to civilian life. It is felt, however, that the emergency placement program has been completed but that the data relative to training and positions should be kept available to interested physicians. Complete files will be located in the offices of the National Committee for Mental Hygiene.

Southern Medical Association.—At the recent meeting of the Southern Medical Association in Miami, Fla., the following officers were elected: Dr. Lucien A. LeDoux, New Orleans, president, and Drs. Oscar B. Hunter, Washington, D. C., and Robert T. Spicer, Miami, vice presidents. The Association's medal for scientific research was presented to Dr. William H. Sebrell Jr., chief, Division of Physiology, National Institute of Health, Bethesda, Md., for his contributions to the study of nutrition and its effect on public health. Among the awards for scientific exhibits, the first one was made to Drs. Amos Christie and J. Cyril Peterson of Vanderbilt University School of Medicine, Nashville, Tenn., for their exhibit on pulmonary calcifications and histoplasmin sensitivity. The second award went to Dr. J. Brown Farrior, Tulane University School of Medicine, New Orleans, for his exhibit on ear surgery, and the third to Dr. Keith S. Grimson, Dr. George J. Baylin, Haywood M. Taylor, Ph.D., Dr. Frederick H. Hesser, Dr. Ralph W. Rundles and Dr. Robert C. Smith of Duke University School of Medicine, Durham, N. C., for their exhibit on vagotomy for peptic ulcer.

Paul Russell Awarded Walter Reed Medal.—The American Society of Tropical Medicine has awarded the Walter Reed Medal for 1946 for meritorious achievement in tropical medicine to Dr. Paul F. Russell of the International Health Division of the Rockefeller Foundation, now assigned to service in Venezuela. Dr. Russell was born in Boston, graduated from Cornell University Medical School in 1921 and received the degree of master of public health at Harvard in 1929. His first significant contribution to the field of malariology concerned "species control" in antimalaria campaigns. His studies on the transmission and epidemiology of malaria in the Philippines and his encouragement of the development of totaquine laid the foundation for an intelligent approach to the problem of malaria control. His studies in India on transmission clarified the epidemiology of malaria. At the beginning of World War II Dr. Russell returned to the United States, was commissioned a lieutenant colonel and was assigned to the Surgeon General's Office, where he conceived the idea of forming malaria survey units and malaria control units, the organization and training of which he planned, later going to Algiers as director of the Allied School of Malaria and chief malariologist of the Allied forces in the North African Theater. He returned to the United States in 1944 and became chief of the Division of Parasitology at the Army Medical School, Washington, D. C., until his return to civilian life early in 1946. Dr. Russell's bibliography consists of more than 120 scientific papers.

Grants for Research in Endocrinology.—The committee on research in endocrinology, National Research Council, announces that requests for grants-in-aid during the fiscal year July 1, 1947 to June 30, 1948 will be received until Feb. 28, 1947. Application blanks may be obtained by addressing the secretary, Division of Medical Sciences, National Research Council, 2101 Constitution Avenue, Washington 25, D. C. In addition to a statement of the problems and research plan or program, the committee desires information regarding the proposed method of attack, the institutional support of the investigation and the uses to be made of the sum requested. No part of any grant may be used by the recipient institution for administrative expenses. The committee makes grants-in-aid of research in the general field of experimental and clinical endocrinology. However, applications for support of research in the problems of sex in the narrower sense cannot be given favorable consideration, and investigators seeking support in this field should direct their proposals to the committee for research in problems of sex of the National Research Council. The committee on research in endocrinology, however, will continue to give consideration to the support of studies of the effect of sex hormones on nonsexual functions, e. g., on general metabolism and on the metabolism of steroid hormones.

LATIN AMERICA

Congress of Pharmacology.—The third Pan American Congress of Ophthalmology will be held in Havana, Cuba, Feb. 23-28, 1948, under the presidency of Dr. Tomas R. Yanes (THE JOURNAL, October 5, p. 299).

New Medical Society.—The Sociedad Ycateca de Obstetricia y Ginecologia with headquarters at Calle 59, Numero 539, Merida, Yucatan, Mexico, was recently established with Drs. Eduardo Urzaiz Rodriguéz president, Fernando Narvaez Aguilar vice president and Manual Espinosa Sierra secretary.

New Journal.—The *Revista de Nutricion,* the organ of the Instituto Nacional de Nutricion of Lima, Peru, recently appeared. The headquarters of the *Revista* is at Ave. Salaverry, Lima, Peru. The first issue does not indicate how often it will be published.

First Inter-American Congress on Brucellosis. — Bi-yearly conferences on brucellosis have been in progress in Mexico since 1930. The fourth was held in Morelia, Mexico, July 1944. The fifth congress was held in Mexico City Oct. 28-Nov. 2, 1946 under the sponsorship of Dr. Jose Zozaya, chairman of the National Brucellosis Commission; the Mexican Society of Tropical Medicine, of which Dr. S. Gonzales Herrejon is chairman, and the Organization Committee of the Congress for the Study of Brucellosis, of which Dr. M. Ruiz Castañeda is chairman. This meeting became the first Inter-American Congress on Brucellosis and was attended by invited speakers from Argentina, Brazil, Cuba, El Salvador, Bolivia, Colombia and Puerto Rico. From the United States were Alice C. Evans, senior bacteriologist of the United States Public Health Service (retired); I. Forest Huddleson, research professor in bacteriology, Michigan Agricultural Experiment Station, Michigan State College; C. F. Jordan, epidemiologist, Iowa State Department of Health; V. T. Schuhardt, University of Texas, Galveston; Joseph D'Antoni, Tulane University, New Orleans; H. J. Schmidt, Mississippi (formerly Tulane University); James P. Campbell, Wheaton, Ill.; Mayor J. Moss, Muncie, Ind.; H. M. Powell, Indianapolis, and Harold J. Harris, New York. The opening address was given by Harris, who reviewed the milestones in the study of brucellosis from the time of Bruce and stressed the contributions made by researchers and clinicians in this hemisphere. Evans discussed public health aspects of brucellosis, Huddleson the unsatisfactory status of cattle vaccination and the possibilities of an improved method, Schmidt the changing virulence of Brucella abortus and its tendency to become a chronic infection, D'Antoni intestinal brucellosis, Schuhardt the chemotherapy of brucella infection in cattle, Campbell the possibility of human transmission, Harris technical factors, uses and limitations of the opsonocytophagic test, and Jordan the epidemiology of brucella infection. (The paper by Harris was prepared with the collaboration of Blanche L. Stevenson, R.N., and Jacoba V. Schochat, B.A.). Important papers from the Spanish speaking countries were presented by Emmanuel Dias, Brazil; Francisco De La Cruz, Cuba; M. Ruiz Castañeda, Mexico; Elidberto Fernandez Ithurrat, Buenos Aires; the late Salvador Mazza, Buenos Aires; Andres Soriano, Bogota, Colombia; Felix Veintemicla, La Paz, Bolivia; Petro Menendez and Roberto Vargas, El Salvador; Oulton Carlos, Cordoba, Argentina; A. Pomales-Lebron, San Juan, Puerto Rico; T. Villefana Lastra, Cordoba, Argentina; C. Carrillo Cardenas, Mexico; Sabino Di Rienzo, Cordoba, and E. Criscuolo, Cordoba, among others. Other papers covering virtually the entire field of brucellosis from the clinical and laboratory points of view were presented. The increasing recognition of the disease in various Central and South American countries became apparent from the data presented. The majority of infections were reported to be of the melitensis (goat) variety. Of interest was the fact that ingestion of cheese made from raw milk of goats and cows accounted for the largest percentage of cases in Mexico City, milk being boiled before used as such. Dr. Alice C. Evans was elected president. An inter-American Committee on Brucellosis was appointed consisting of Alice C. Evans of the United States, chairman; Dr. M. Ruiz Castañeda, Mexico; Dr. Salvador Mazza, Argentina, and Dr. I. F. Huddleson, East Lansing, Mich. This committee was empowered to bring to the attention of the proper division of the United Nations the importance of forming a world organization to deal with the problem of brucella infection in animals and man. The second Inter-American Congress on Brucellosis is to be held in Argentina in 1948, probably in April.

FOREIGN

Gift of Radium to Switzerland.—Belgium has offered 3 Gm. of radium to Switzerland in gratitude for "hospitality granted Belgian refugees during the war," the Swiss radio announced. In accepting the gift, the Swiss government said that it would be used in the fight against cancer.

Course of Urology.—A course of urologic instruction will be presented at St. Peter's and St. Paul's hospitals, London, beginning in January and continuing throughout April. A six months' course will begin on the conclusion of the postgraduate course. The fee for the three months' course is 15 guineas payable in advance. Applications should be made to the secretary, St. Peter's Hospital for Stone, Henrietta Street, London, W. C. 2, England.

Congress on School Hygiene.—The French Society for School Hygiene and the Society of Medical Inspectors of the Schools in the Seine district are sponsoring a Congress on School and University Hygiene in Paris, June 25 to 29, 1947 under the auspices of the ministers of education and public health. Physicians interested in school hygiene in various countries are invited to participate either as discussants or as reporters. Participation and registration are free. At that time the French Society for School Hygiene will propose the creation of a commission to be charged with the organization of periodic congresses concerning school hygiene.

Marriages

JAMES MARSHALL SKINNER JR., New Martinsville, W. Va., to Miss Mary Elizabeth Hurban of Powhatan Point, Ohio, June 6.

HAROLD HENSTORF, Farragut, Iowa, to Miss Marie D. Richter of St. Cloud, Minn., in Kansas City, Kan., August 8.

JOHN WILLIAM VANDERBILT, Plattsburgh, N. Y., to Miss Marguerite Jean Orr of Ormstown, Quebec, Canada, August 14.

JACK H. NEESE, Charlotte, N. C., to Miss Jacquelyn Reflogal of Clearwater, Fla., in Monroe, N. C., August 9.

HAROLD IRA HARVEY, New Britain, Conn., to Miss Ada Patricia Hawe of Binghamton, N. Y., June 20.

ALBERT HAROLD WILLIAMS, Revere, Mass., to Miss Loise Carol Schear of Evansville, Ind., September 8.

GABRIEL P. JOSEPH, Myrtle Beach, S. C., to Miss Mary Elizabeth McAlhany of Branchville, August 5.

LESLIE STALBLER PIERCE to Miss Mary McNair Cadzow, both of Greensburg, Pa., September 14.

MORTON NATHANSON, New York, to Miss Peggy Lee Prag of Richmond, Va., September 1.

CHARLES F. SHERWIN, St. Louis, to Miss Myra Murrell of Lonedell, Mo., August 11.

Deaths

Paul Pressly McCain ⊕ Sanatorium, N. C.; born in Due West, S. C., June 26, 1884; University of Maryland School of Medicine, Baltimore, 1911; assistant professor of medicine at the Duke University School of Medicine in Durham; specialist certified by the American Board of Internal Medicine; awarded the Moore County Medical Society medal for his paper presented at the 1928 annual session of the Medical Society of the State of North Carolina, of which he had been president; past president of the Buncombe County Medical Society; served as president, vice president, member of the board of directors and executive committee of the National Tuberculosis Association; past president of the Southern Tuberculosis Conference; director and member of the executive committee of the North Carolina Tuberculosis Association; member of the American Trudeau Society, serving as a member of its council from 1939 to 1942, American Clinical and Climatological Association and the Southern Medical Association; member of the subcommittee on tuberculosis of the National Research Council; since 1924 superintendent, medical director and director of the extension department of the North Carolina Sanatorium for the Treatment of Tuberculosis, where he was chief of medical service and assistant superintendent from 1914 to 1923; served as superintendent of the Western North Carolina Sanatorium in Black Mountain and the Eastern North Carolina Sanatorium in Wilson; received an honorary LL.D. degree from the University of North Carolina in 1936; on the editorial board of the *North Carolina Medical Journal;* trustee of the Flora Macdonald College, Red Springs; killed instantly near Raleigh Nov. 25, 1946, aged 62, when his automobile collided with a bus while he was on his way to attend a medical meeting.

Eugene Anthony Stack, Chicago; born in Chicago, March 28, 1908; Loyola University School of Medicine, Chicago, 1935; interned at the Cook County Hospital and the Kankakee (Ill.) State Hospital; served a residency at the Municipal Contagious Disease Hospital, Presbyterian Hospital and the Children's Memorial Hospital; member of the American Medical Association; specialist certified by the American Board of Pediatrics; began active duty as a lieutenant in the medical corps of the U. S. Naval Reserve in March 1943 and released from active duty with the rank of lieutenant commander in February 1946; on the staffs of St. Anne's and Children's Memorial hospitals; died in the Belmont Hospital Dec. 1, 1946, aged 38, of a skull fracture received in an automobile accident.

Ira Clyde Miller ⊕ Harrisburg, Pa.; born in Johnstown, Pa., March 22, 1895; University of Pittsburgh School of Medicine, 1928; special epidemiologist of the Pennsylvania Department of Health; also a graduate in pharmacy; interned at St. Francis Hospital in Pittsburgh; served in France during World War I; began active duty in the medical corps, Army of the United States, in June 1941; spent eighteen months as the commanding officer of the 12th Hospital Center in England; awards include the Bronze Star; service terminated in May 1946 with the rank of colonel; died Oct. 31, 1946, aged 51, of carcinoma of the parotid gland.

William Leland Holt, Amherst, Mass.; Harvard Medical School, Boston, 1905; member of the American Medical Association; formerly college physician at the Massachusetts State College; served as health officer of Hot Springs National Park, Ark., as professor of hygiene and university physician at the University of Tennessee at Knoxville and as director of the division of communicable diseases and social hygiene in the state department of health of Maine; died in the Cooley Dickinson Hospital, Northampton, Oct. 18, 1946, aged 67, of shock following a prostatectomy.

Julius Ord Arnson ⊕ Bismarck, N. D.; Northwestern University Medical School, Chicago, 1911; specialist certified by the American Board of Internal Medicine; fellow and governor of the American College of Physicians; interned at St. Barnabas Hospital in Minneapolis; served in France during World War I; member of the board of editors of the *Journal-Lancet;* part owner of the Quain and Ramstad Clinic; on the staffs of St. Alexius Hospital and the Bismarck Evangelical Hospital, where he died Oct. 29, 1946, aged 58, of coronary thrombosis.

William Edward Patterson ⊕ Minneapolis; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; served as assistant professor of ophthalmology at the University of Minnesota Medical School and the graduate school; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; formerly vice president of the Hennepin County Medical Society; on the staffs of Asbury and St. Barnabas hospitals; died Oct. 30, 1946, aged 71, of pulmonary embolism.

John Ashworth, Chicago; born in Chicago, Dec. 16, 1906; Northwestern University Medical School, Chicago, 1935; member of the American Medical Association; interned at the Cook County Hospital, where he engaged in research work; instructor in the department of medicine at his alma mater; began active duty as a major in the medical corps, Army of the United States, in July 1942; released from active duty June 25, 1946 with the rank of lieutenant colonel; died in the Belmont Hospital Dec. 2, 1946, aged 39, of injuries received in an automobile accident.

Frederick Beekel, East Cleveland; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1906; member of the Cleveland Academy of Medicine and the Cleveland Medical Library; for many years on the staff of the Cleveland City Hospital; died Nov. 3, 1946, aged 65, of coronary heart disease.

Harry Granville Bonnell, Tucson, Ariz.; Starling Medical College, Columbus, Ohio, 1900; member of the American Medical Association; died recently, aged 72.

Lynn Brownell Chase ⊕ Morrisville, N. Y.; University of the City of New York Medical Department, New York, 1893; past president of the Madison County Medical Society; director and vice president of the First National Bank of Morrisville; first president of the board of education of the Morrisville Central School district; served as school physician, health officer of the town of Eaton and village of Morrisville; director of the Business Men's Association; died Nov. 3, 1946, aged 73, of heart disease.

John Summerfield Cherrington ⊕ Logan, Ohio; Ohio Medical University, Columbus, 1897; for many years co-owner and chief of the surgical staff of the Cherrington Hospital; died in the Hocking Valley Hospital Oct. 22, 1946, aged 74, of cerebral embolism.

Mayer S. Coffler ⊕ Chicago; University of Illinois College of Medicine, Chicago, 1913; served during World War I; died in the Mount Sinai Hospital Oct. 16, 1946, aged 59, of hypernephroma of the left kidney.

Percival F. Dalphin. ⊕ Malone, N. Y.; Bellevue Hospital Medical College, New York, 1891; served during the Spanish-American War and World War I; formerly associated with the U. S. Public Health Service; on the staff of the Alice Hyde Memorial Hospital; died Sept. 24, 1946, aged 78, of chronic interstitial nephritis and hypertrophied prostate.

David A. Dickson, Grand Rapids, Mich.; Detroit College of Medicine, 1904; also a graduate in pharmacy; on the staff of the Butterworth Hospital, where he died Oct. 31, 1946, aged 75, of pulmonary tuberculosis.

Esgar Bowen Foltz ⊕ Akron, Ohio; Medical College of Ohio, Cincinnati, 1899; trustee of the Akron Art Institute and the Summit County Historical Society; for many years jail physician; died in the People's Hospital Oct. 22, 1946, aged 73, of arteriosclerosis, asthma and anemia.

Grant W. Gregg, Ashland, Ore.; Medical College of Ohio, Cincinnati, 1890; on the staff of the Community Hospital; member of the school board and city councilman; died Oct. 9, 1946, aged 81, of coronary thrombosis.

Henry M. Haynes, Gatesville, Texas; Dallas Medical College, 1904; member of the American Medical Association; past president of the Coryell County Medical Society; for many years city health officer; died recently, aged 70, of coronary thrombosis.

William Brown Heagerty, Sierra Madre, Calif.; L.R.C.P., L.R.C.S., Edinburgh, and L.F.P.S., Glasgow, Scotland, 1900; formerly associated with the Indian Service; lieutenant colonel, medical reserve corps, U. S. Army, not on active duty; died recently, aged 70.

Ira Dorman Nelson, Albuquerque, N. M.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1904; for many years associated with the Indian Service, serving as superintendent of many of its hospitals; died Oct. 6, 1946, aged 68, of carcinoma.

William Oscar Pollard, Speers Ferry, Va.; Medical College of Virginia, Richmond, 1904; member of the American Medical Association; died Oct. 28, 1946, aged 68, of injuries received in an automobile accident.

R. Ford Ratliff, Lucedale, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1901; member of the American Medical Association; died Oct. 16, 1946, aged 68, of cardiorenal disease.

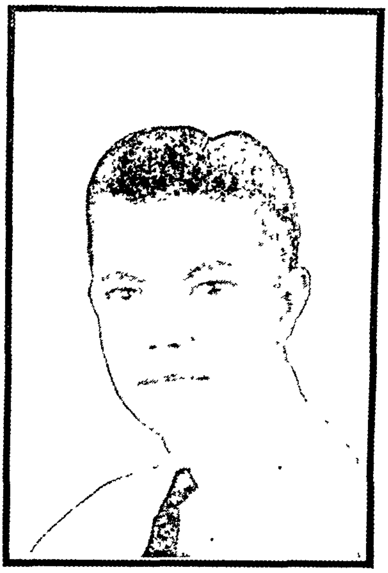
Claudius J. Riddick, Suffolk, Va.; Bellevue Hospital Medical College, New York, 1890; member of the American Medical Association; served as county physician; on the staff of the Virginia General Hospital; died Oct. 18, 1946, aged 87, of arteriosclerosis.

Frederick Arthur Rieckhoff, Ridgeville Corners, Ohio; Ohio State University College of Medicine, Columbus, 1917; member of the American Medical Association; died in Minneapolis Oct. 29, 1946, aged 55, of heart disease while en route from Chicago to Minneapolis on a plane.

Harry Rubinstein ⊕ Pittston, Pa.; Medico-Chirurgical College of Philadelphia, 1910; served during World War I; connected with Pittston Hospital; died Oct. 13, 1946, aged 65, of acute cardiac dilatation.

John Joseph Sheehey ⊕ Graymoor, N. Y.; University of Wooster Medical Department, Cleveland, 1891; Affiliate Fellow of the American Medical Association; served on the staffs of the Coney Island, Samaritan, Harbor and Caledonia hospitals in Brooklyn; retired to the Franciscan Monastery to serve as physician for the Friars; died in St. Clare's Hospital in New York Oct. 2, 1946, aged 79, of myocardial failure.

Lieut. Felix B. Long Jr. (MC), U. S. Navy, 1915-1942



Lieut. Louis W. Streuter (MC), U.S.N.R., 1914-1945

Oscar Henry Shepard, O'Donnell, Texas; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1905; died in a hospital at Lubbock recently, aged 75, of coronary thrombosis.

David Herman Smith, Millbrook, Pa.; Medical Department of the Western University of Pennsylvania, Pittsburgh, 1894; served on the staffs of Mercer (Pa.) Cottage and Grove City (Pa.) hospitals; died Oct. 21, 1946, aged 78, of arteriosclerosis.

William S. Stanley, Milwaukee; Milwaukee Medical College, 1900; member of the American Medical Association; died Oct. 27, 1946, aged 69, of hypertensive heart disease.

Edward Clayton Stroud, Marietta, S. C.; University of the South Medical Department, Sewanee, Tenn., 1899; honorary member of the South Carolina Medical Association and the Greenville County Medical Society; died Oct. 2, 1946, aged 71.

Mathias Sundt ⊕ Minneapolis; University of Minnesota College of Medicine and Surgery, Minneapolis, 1909; on the staff of the Fairview Hospital, where he died Oct. 21, 1946, aged 63, of carcinoma of the colon.

Robert Edward Timberlake ⊕ Richmond, Va.; Medical College of Virginia, Richmond, 1914; for many years physician for the city health department; died in the Stuart Circle Hospital Oct. 27, 1946, aged 56, of a ruptured diverticulum.

Edward Patrick Troy, Chicago; Northwestern University Medical School, Chicago, 1914; member of the American Medical Association; interned at Cook County Hospital in 1916, when he joined the City of Chicago Municipal Tuberculosis Sanitarium, where he was superintendent of dispensary service for many years; at one time physician in charge of the Robey Street Dispensary; served during World War I; died Dec. 11, 1946, aged 59, of cerebral hemorrhage.

James Frederic Wagner, Bristol, Pa.; Jefferson Medical College of Philadelphia, 1904; member of the American Medical Association; served as a member and president of the Bristol borough council and board of health; past president of the Bucks County Medical Society; fellow of the American College of Surgeons; died in Southington, Conn., Oct. 7, 1946, aged 67, of cerebral thrombosis.

Otto Wagner ⊕ Elizabeth, N. J.; Cornell University Medical College, New York, 1903; member of the Board of Fire Commissioners and director of Elizabeth Trust Company; formerly city physician and member of the city council; consulting physician at Alexian Brothers Hospital, St. Elizabeth Hospital and Elizabeth General Hospital, where he died Oct. 22, 1946, aged 74, of carcinoma of the rectum.

Wilber Lloyd Warren ⊕ Gilman City, Mo.; John A. Creighton Medical College, Omaha, 1916; served as a member of the Selective Service Board; on the staff of the Wright Memorial Hospital in Trenton; died Oct. 29, 1946, aged 57, of cardiac decompensation.

Louis Weber, West Baden, Ind.; University of Louisville Medical Department, 1898; for many years assistant medical director for the Commonwealth Life Insurance Company in Louisville; died in St. Joseph Infirmary, Louisville, Oct. 25, 1946, aged 71, of cerebral hemorrhage.

Jabez William West, Idaho Falls, Idaho; Western Reserve University School of Medicine, Cleveland, 1918; member of the American Medical Association; died suddenly Oct. 11, 1946, aged 61, of coronary thrombosis.

George David Wilde ⊕ Fort Edward, N. Y.; Albany Medical College, 1904; in 1922 became associated with the medical department of Endicott-Johnston Corporation; died recently, aged 66, of hypertensive heart disease and coronary thrombosis.

KILLED IN ACTION

Felix Benjamin Long Jr., Assistant Surgeon, Lieutenant, U. S. Navy, Starkville, Miss.; Tulane University of Louisiana School of Medicine, New Orleans, 1940; interned at the Southern Baptist Hospital in New Orleans; entered the medical corps of the U. S. Naval Reserve as a lieutenant (jg) on July 23, 1941; began active duty in the same rank on Sept. 10, 1941; commissioned a lieutenant (jg) in the medical corps of the U. S. Navy on Jan. 5, 1942; promoted to lieutenant on June 15, 1942; took his training at Corpus Christi, Texas, and flight training at Washington, D. C., and Pensacola, Fla.; served overseas at New Caledonia and Guadalcanal, attached to the 13th Marine Division as flight surgeon; awarded the Purple Heart; killed in action in the Pacific area Nov. 14, 1942, aged 27.

Louis Warren Streuter, Hamilton, Ohio; St. Louis University School of Medicine, 1940; interned at St. Louis City Hospital, where he served a residency; began active duty as a lieutenant (jg) in the medical corps of the U. S. Naval Reserve on March 15, 1943; promoted to lieutenant; killed in action in the Philippines; aged 31; presumptive date of death Oct. 26, 1945, according to the U. S. Navy.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 7, 1946.

The Nostrum Evil

At the Hunterian Society an interesting debate took place on the nostrum evil. The motion was: "That the uncontrolled advertising of patent medicines is a menace to the public." The debate was led on the positive side by Mr. H. Linstead, secretary of the Pharmaceutical Society, and on the negative by a layman, Mr. Mortimer, director of a company which produces a well known proprietary medicine. In the course of the debate varying estimates were made of the amount spent annually on proprietary medicines. One physician said that as much as $36,000,000 a year was spent in advertising them, but Mr. Mortimer declared that the figure was much lower. The last published figure for the prewar year 1938 was $19,300,000 for all these preparations, including tonic wines, veterinary medicines and rupture appliances. The advertising space occupied no more than 8 per cent of the total advertising space in newspapers. But he admitted that his figures related only to advertising in the newspapers and took no account of advertising by posters on railways and other places or advertising by correspondence.

In the debate a curious sidelight was thrown on the working of national health insurance. It was seriously argued that physicians ought to be thankful to the manufacturers of proprietary medicines, for if they had to deal with all the persons who go to the pharmacist for something to relieve an ache or pain their surgeries would be choked with patients. They would have to see again all those whom they hoped they had seen for the last time. The advent of national health insurance apparently caused no falling off in the demand for proprietary medicines. One speaker, a physician, prophesied that under the proposed National Health Service, which covers all persons, the sales of proprietary medicines will be doubled or trebled. For this he gave the psychologic reason of the ineradicable conviction of most persons that what is not directly paid for is of no value. Thus he made apparent the great drawback of any "free to all" scheme. But one might go farther than this revelation of the debate. In spite of whatever relief the harasssed panel physician gets from the sale of proprietary medicines, much of his time is taken up by hypochondriacs and others with nothing the matter. In periods of stress they take up so much time that they limit his attention to cases of serious illness. Thus there are two opposite effects of the "free to all," but both can be traced to the craving for bottles of medicine, which an eminent surgeon of a former generation, Sir Frederick Treves, said was in this country "second only to the craving for strong drink."

Overseas Examinations by the Royal College of Surgeons

The Fellowship of the Royal College of Surgeons is the highest surgical qualification in the British empire and, though sought from all over the world, the examinations have always had to be taken in London. But the College has made a new departure. In response to requests from the Royal Australian College of Surgeons, the medical faculty of the Egyptian University, Cairo, and the Director General of Medical Services in India, the College will conduct the Primary Fellowship examination overseas. The following examiners have been appointed for the purpose: Sir Heneage Ogilvie, Prof. B. A. McSwiney, F.R.S., and Prof. G. Hadfield. They will conduct the examination in Cairo on December 12 and in Madras on December 23 and will begin in Australasia on January 6. The Australasian examinations will take place at Melbourne, Sydney and Dunedin. The examiners are expected to arrive back in this country about the end of January. The following associate examiners have been appointed to assist them: In Cairo, Prof. D. E. Derry and Prof. G. V. Anrep, F.R.S.; in India, Prof. A. A. Iyer; in Melbourne, Australia, Prof. S. Sunderland; in Sydney, Douglas Miller, and in Dunedin, John Carney.

The extent to which the new facilities offered to medical graduates of recognized universities overseas have been availed of can be judged by the numbers of candidates at the various centers: Cairo, 32; Madras, 65; Melbourne, 63; Sydney, 29, and Dunedin, 35. Those who satisfy the examiners will be eligible for the final Fellowship examination in this country and will have the opportunity to study surgical practice in England.

The Fatal Plastic Bib

A new danger to infant life, the result of technical progress which has given us plastics, is revealed by an inquest on a baby boy aged 3 months. An authentic account of the tragedy has been given in a letter to the *British Medical Journal* (November 23, page 804) by Dr. J. H. Fodden, pathologist to the Royal Salop Infirmary. The child was placed in his cot for sleep with a clean plastic bib tied loosely around his neck. The bib was small and was designed to fasten only around the neck with two pieces of tape. It was almost as thin as tissue paper and just as transparent. When the child was next seen he had been dead some hours. The thin plastic membrane covered his face almost as completely as did his skin. It took up every corner of his nose and mouth. The necropsy, which Dr. Fodden made, showed that the child had been asphyxiated. After he had warmed the bib in his hand for some time it seemed to become slightly "tacky." Then when placed over the child's face it spread quickly into the position of a close fitting mask. It is desirable that the warning of this tragedy should be widely circulated, as there may be millions of such bibs in use and on the market.

Labor Attempts to Coerce Nurses and Physicians to Join a Union

Since the return of the labor government the trade unions have become more aggressive. The latest manifestation of this is what is called "the closed shop" refusing, under the threat of a strike, to allow to work persons who are not members of a trade union. With the capture of many municipal bodies by labor, the way was opened for the rule that all the employees must be members of trade unions. The climax was reached when the matron, deputy matron, thirty-six nurses and one physician of the Willesden Municipal Hospital received notice of dismissal "in view of the fact that you have not complied with the council's resolution regarding membership of a trade union." Seventy nurses of Walthamstow received a similar notice that they must join a recognized trade union, and the same attempt at coercion has been made in other municipal hospitals. At Willesden the sister tutor and deputy matron had been serving the hospital for twenty-four years. Yet they were given a month's notice for a reason that had no relation to their capacity for their professional work. The answer of the nurses was an indignant refusal to comply with the order, and the council has begun to climb down. Unfortunately for them, there is a great shortage of nurses just now and if the nurses are dismissed probably none can be found to take their place. It is said that the council will recognize the Royal College of Nurses, to which most of the nurses belong, though this professional organization is not a trade union. Not only the press but the more wary tacticians who form the Labor Government have condemned the council for trying to coerce the nurses and not recognizing that the nursing of the sick is a primary matter which should come before politics. The British Medical Association is about to take action in the matter. The Secretary has declared that in the view of the British Medical Association no physician should be required to join any body, the British Medical Association or other.

MOSCOW

(From Our Regular Correspondent)

Oct. 12, 1946.

A New Method of Accelerating Labor

In 1945 Prof. R. Schub in the Central Institute of Gynecology and Obstetrics at Leningrad used thiamine hydrochloride for the first time as an anesthetic during labor. His method was tried in 900 cases; 250 pregnant women received vitamin B_1 as an anesthetic, and a control group of 200 pregnant women were anesthetized by other methods. All were completely examined, including multiple laboratory tests. Such detailed observations were not made on the remaining 450. The vitamin B_1 balance was studied during labor, post partum and in the puerperium, and the effects obtained were evaluated by special apparatus.

Anesthesia was begun simultaneously with active labor by intravenous, intramuscular and oral administration of 40 to 150 mg. of concentrated vitamin solution, each ampule containing 20 mg. of thiamine hydrochloride specially prepared by the All-Union Scientific Vitamin Institute. For oral use crystalline vitamin B_1 was taken.

The effect of intravenous administration was rapid but very short, and for this reason it was discontinued. Most active was the intramuscular administration of 60 mg. of thiamine hydrochloride. If pain appeared during parturition, a supplementary dose of 60 mg. of the drug was introduced. Anesthesia was observed in ten to fifteen minutes, and in 40 per cent of the
its effect was present till the end of labor. In 51.2
etic effect was short, and in 5.6 per cent
of vitamin B_1 was ineffective.

is not dangerous for mother or child. In a few
evanescent hyperemia was observed. Previous observa-
indicated that B-hypervitaminosis was seen only when
doses much larger than those of Professor Schub are used.

The administration of vitamin B_1 considerably ac
labor. *Its duration was half as long as usual.* A
explanation is as follows: Vitamin B_1 deficiency inh
phorus metabolism closely connected with the sy
carbohydrates which diminishes the energy reserves o

infected with South American Tr
agent of Chagas' disease. In
development of tumor wa
in the Soviet Medical
their experiments (stopped
in 1943) on other types of m

Experiments on more than 1
strated the existence of a specific t
animals which have not been inoculat
soma may be seen in the internal o
animals they are found principally in th
nosoma penetrate into malignant cells in
destruction beginning in the nucleus is obs
areas of destroyed malignant tissue increas
rounding all the neoplasm, and in their place
tissue forms.

The endotoxin of the trypanosoma has a great c
effect in different inoculated forms of experimental can
cancerolytic substance present in the trypanosoma body is soluble, stabile to acids and alcohol and may be filtered thro
Berkefeld L-3. It was demonstrated that this substance has cancerolytic effect on human malignant neoplasms and is innocuous even with prolonged subcutaneous or intramuscular administration. Sometimes a slight temperature reaction was observed, but it disappeared after the injections were finished.

This cancerolytic substance, named KR after the first letters of the investigators' names, was administered to 18 patients in the fourth stage of cancerous disease of the lips, larynx, breast and uterus. Such cases were selected because they permitted continuous observation of the action of KR. Destruction of the tumor was observed in 11 patients; 1 was made curable, and, following treatment with x-ray, the laryngeal tumor completely disappeared. In another case where the diagnosis was histologically confirmed, subcutaneous administration of KR caused the tumor to completely disappear. The patient has been under observation more than half a year and pathologic changes are absent.

The data demonstrate that the anticancerous substance of T. crusi has an elective cancerolytic action and simultaneously is innocuous to healthy tissues. Such eminent Soviet scientists as Petrov, Bogomolets and others appraise this work highly. At present Klujeva and Roskin are studying the disintegration of tumor cells, methods of obtaining a chemically pure preparation of KR, various forms of the cancerolytic substance and
stages of cancer.

Societies in the Soviet Union

Death of Alexander Bogomolets

The eminent Soviet pathologist Alexander A. Bogomolets died, July 19, 1946 at the age of 65. He was president of the Ukrainian Academy of Sciences, a member of the Presidium of the Soviet Union Academy of Sciences, a Stalin Prize winner and deputy of both Supreme Councils.

He graduated from the medical faculty in 1906, receiving his M.D. degree in three years. After studying physiology in Paris, he was elected, in 1912, professor of general pathology and bacteriology in the Saratov University. In 1928 he was appointed to the Chair of Pathology in the Second Moscow Medical Institute, and two years later he was elected president of the Ukrainian Academy of Sciences at Kiev. There he organized the Institute of Experimental Biology and Pathology, of which he was director until his death

Bogomolets wrote many scientific works and many were published by his famous school of pathophysiologists on such subjects as metabolism, allergy, nervous regulation of the vegetative functions, pathophysiology of hypertension and premature senility. The chief studies of Bogomolets and his collaborators concerned connective tissue, and they resulted in a method for treatment of various conditions by means of antireticular cytotoxic serum (ACS). This serum is made from the blood of horses which previously had received a spleen preparation that stimulates the activity of connective tissue. ACS helps in the healing of fractures, wounds and ulcers by improving the nourishment of cells.

The manual on pathophysiology written by Bogomolets is widely used by Soviet physicians and medical students. In a special decision, the Council of Ministers of the Soviet Union resolved that Bogomolets's name be honored at the Kiev Medical Institute and the Institute of Experimental Biology and Pathology. To perpetuate his memory an annual prize of 25,000 rubles ($5,000) is to be awarded by the Ukrainian Academy of Science. Thirty scholarships in his name are to be instituted for postgraduates, and his scientific work will be published by the Ukrainian Academy of Sciences during the years 1946 to 1948.

DENMARK

(From Our Regular Correspondent)

Copenhagen, Dec. 9, 1946.

The Danish Medical Association

A recent report on the activities of the Danish Medical Association, with a membership of 4,239, reveals a varied spectrum with helpfully disinterested advice at one end, gently chiding admonitions in the middle and stern disciplinary measures at the more somber end. Somewhere in the middle of this spectrum is the problem raised by a local branch of the association anxious to obtain from its central council a ruling on what part, if any, is to be played by the medical profession in beauty culture. It was asked, can a doctor act as judge at an examination conducted at an institute for beauty culture? The answer pointed out that though participation by the medical profession in the beautification of the nation is not directly prohibited by the rules of the association, such participation should be frowned at rather than smiled on, since some beauty experts have been tempted to puff themselves as having been "medically approved" in the sense that they have passed a medical examination on beauty culture. Among the instances requiring sterner measures is that of a physician who, during the occupation of Denmark by the Germans, acted as a locum tenens for a colleague in hiding from them. A rebuke was administered to the locum tenens for having exploited his colleague's embarrassment by exorbitant charges.

Supervision of Medical Notes in the Lay Press

During a general debate at a recent meeting of the Danish Medical Association, the suggestion was made that this body should appoint a press secretary to act as a watchdog on incorrect and misleading medical news in the lay press. The Danish Medical Association has for many years collected press cuttings, and the above suggestion aimed merely at extending this activity. The lack of enthusiasm for this suggestion was most effectively voiced by one speaker who said that a medical press secretary who attacked every little mistake in regard to medical matters in the lay press would succeed in making himself a nuisance without really helping to educate the public. An official denial appearing in the lay press would, as a rule, just draw attention to some trifle which the public had already forgotten. One the other hand, the editor of the journal of the Danish Medical Association (*Ugeskrift for læger*) Dr. Mogens Fog said he would like the lay press to be free to cull medical news from the medical press.

Fees for Locum Tenens

In 1939 a scale of charges for a locum tenens was drawn up by the Danish Medical Association with the intention of preventing abuses at either end of the scale. But since then terms have so often been agreed on between the interested parties without reference to the official scale that its further maintenance has seemed questionable. Not only has the Danish Medical Association often been left out of the picture altogether in negotiations between the contracting parties, but the journal of the Danish Medical Association has actually been employed as a medium for advertising locum tenens terms incompatible with the association's rules. To put an end to this unconstitutional state of affairs, the association has recently discussed two possibilities. The first and least attractive is to let the laws of supply and demand dictate terms. If this is done a locum tenens can force prices up when physicians are few and the other side can force prices down when physicians are many. The outcome of such a state of affairs would, in the opinion of the association, be so unsatisfactory that it would be wiser to adopt the second alternative and definitely to brand as unethical those agreements which fail to comply with the rules laid down by the association. However, it is pointed out that such rules should not apply to hospital appointments or to a specialist employing a locum tenens.

Responsibility for Appendicitis Mortality

Though Denmark has a population of only 3.9 millions, there were as many as 283 deaths from appendicitis in 1944. In the same year there were some 2,100 patients treated for appendicitis in the hospitals of greater Copenhagen. Among these patients there were 48 deaths, 28 due to peritonitis. Dr. Mogens Ingerslev of Surgical Department A at the Bispebjerg Hospital has recently undertaken an investigation of what befell the 221 patients with appendicitis treated in his hospital before Feb. 1, 1946. The title of his study, Responsibility for the Mortality of Acute Appendicitis, gives an accusatory tone to his study. He classifies his 221 patients according to the interval between the onset of pain and the request for medical aid. In 50 cases the correct diagnosis was not made at a physician's first visit, and these cases are classified according to the interval between the first and second visit of the physician. The 221 cases are also classified according to the general condition of the patient on admission to the hospital and the degree and localization of the pain. It was noteworthy that in as many as 71 cases there was a history of one or more previous attacks. The final conclusion to which Dr. Ingerslev comes is that appendicitis mortality is not going to be greatly reduced by sulfonamide preparations, penicillin and the like but by application of the three golden rules: early diagnosis, early admission to a hospital and early surgical intervention.

condemned the council for trying to coerce the nurses and not recognizing that the nursing of the sick is a primary matter which should come before politics. The British Medical Association is about to take action in the matter. The Secretary has declared that in the view of the British Medical Association no physician should be required to join any body, the British Medical Association or other.

MOSCOW

(From Our Regular Correspondent)

Oct. 12, 1946.

A New Method of Accelerating Labor

In 1945 Prof. R. Schub in the Central Institute of Gynecology and Obstetrics at Leningrad used thiamine hydrochloride for the first time as an anesthetic during labor. His method was tried in 900 cases; 250 pregnant women received vitamin B_1 as an anesthetic, and a control group of 200 pregnant women were anesthetized by other methods. All were completely examined, including multiple laboratory tests. Such detailed observations were not made on the remaining 450. The vitamin B_1 balance was studied during labor, post partum and in the puerperium, and the effects obtained were evaluated by special apparatus.

Anesthesia was begun simultaneously with active labor by intravenous, intramuscular and oral administration of 40 to 150 mg. of concentrated vitamin solution, each ampule containing 20 mg. of thiamine hydrochloride specially prepared by the All-Union Scientific Vitamin Institute. For oral use crystalline vitamin B_1 was taken.

The effect of intravenous administration was rapid but very short, and for this reason it was discontinued. Most active was the intramuscular administration of 60 mg. of thiamine hydrochloride. If pain appeared during parturition, a supplementary dose of 60 mg. of the drug was introduced. Anesthesia was observed in ten to fifteen minutes, and in 40 per cent of the women its effect was present till the end of labor. In 51.2 per cent the anesthetic effect was short, and in 5.6 per cent the administration of vitamin B_1 was ineffective.

This method is not dangerous for mother or child. In a few cases, an evanescent hyperemia was observed. Previous observations indicated that B-hypervitaminosis was seen only when doses much larger than those of Professor Schub are used.

The administration of vitamin B_1 considerably accelerated labor. Its duration was half as long as usual. A physiologic explanation is as follows: Vitamin B_1 deficiency inhibits phosphorus metabolism closely connected with the synthesis of carbohydrates which diminishes the energy reserves of muscular tissue. The introduction of thiamine delays muscular fatigue, helps to store glycogen and thus forms an energy reserve. It accelerates contractions of the involuntary muscles having a direct peripheral effect as well as acting on the centers, as was demonstrated by Chochard.

This complex work of studying the action of vitamin B_1 during labor has only begun. It is headed by Prof. R. L. Lourje and P. L. Beloschaska in consultation with Prof. A. E. Mandelstamm, S. A. Jagunov and others. The scientific Medical Council of the All-Union Ministry of Health has proposed that the Leningrad, Moscow, Kiev, Voronesz and Sverdlovsk gynecologic and obstetric clinics study Schub's method, which opens new ways in the management of labor.

The Cancerolytic Substance of Trypanosoma Crusi

Recently Prof. Nina G. Klujeva, corresponding member of the Academy of Medical Science of the Union of Soviet Socialist Republics, and her husband, Prof. Gregory J. Roskin, presented at the meeting of the academy a report of their investigations begun in 1929 in which they had nearly 70 per cent of cures in adenocarcinomatous mice. After inoculation the mice were infected with South American Trypanosoma crusi, causative agent of Chagas' disease. In the remaining 30 per cent the development of tumor was delayed. These results were published in the Soviet Medical Press. Klujeva and Roskin continued their experiments (stopped during the war and taken up again in 1943) on other types of malignant tumors.

Experiments on more than 13,000 laboratory animals demonstrated the existence of a specific tumor trophism. In the control animals which have not been inoculated with the tumor, trypanosoma may be seen in the internal organs, while in cancerous animals they are found principally in the tumor tissue. Trypanosoma penetrate into malignant cells in which the process of destruction beginning in the nucleus is observed. As a result areas of destroyed malignant tissue increase, gradually surrounding all the neoplasm, and in their place new connective tissue forms.

The endotoxin of the trypanosoma has a great cancerolytic effect in different inoculated forms of experimental cancer. The cancerolytic substance present in the trypanosoma body is water soluble, stabile to acids and alcohol and may be filtered through Berkefeld L-3. It was demonstrated that this substance has a cancerolytic effect on human malignant neoplasms and is innocuous even with prolonged subcutaneous or intramuscular administration. Sometimes a slight temperature reaction was observed, but it disappeared after the injections were finished.

This cancerolytic substance, named KR after the first letters of the investigators' names, was administered to 18 patients in the fourth stage of cancerous disease of the lips, larynx, breast and uterus. Such cases were selected because they permitted continuous observation of the action of KR. Destruction of the tumor was observed in 11 patients; 1 was made curable, and, following treatment with x-ray, the laryngeal tumor completely disappeared. In another case where the diagnosis was histologically confirmed, subcutaneous administration of KR caused the tumor to completely disappear. The patient has been under observation more than half a year and pathologic changes are absent.

The data demonstrate that the anticancerous substance of T. crusi has an elective cancerolytic action and simultaneously is innocuous to healthy tissues. Such eminent Soviet scientists as Petrov, Bogomolets and others appraise this work highly. At present Klujeva and Roskin are studying the disintegration of tumor cells, methods of obtaining a chemically pure preparation of KR, various forms of the cancerolytic substance and its use in different stages of cancer.

Medical Societies in the Soviet Union

The All-Union Minister of Health has approved a new structure of scientific medical societies in this country. All-Union special societies will be organized. Medical societies of republics, regions and cities will be included, as well as existing All-Russian societies and associations.

A registration of all former and present members of scientific medical societies is being made. Scientific workers with a candidate's or doctor's degree who have been recommended by two society members may be elected. Physicians who have been practicing not less than two years and who have published contributions also may be elected members after recommendation by three members of the society. Physicians who are famous because of their scientific contributions or activity in health organizations may be elected honorary members.

The Soviet Union Scientific Medical Council of the Ministry of Health must work out in collaboration with All-Union Medical Societies the plan of their meetings and programs for 1947-1948 before Dec. 1, 1946. A committee for the guidance of medical scientific societies has been organized under the presidency of Prof. V. S. Preobrajensky, honorary worker of science.

Death of Alexander Bogomolets

The eminent Soviet pathologist Alexander A. Bogomolets died, July 19, 1946 at the age of 65. He was president of the Ukrainian Academy of Sciences, a member of the Presidium of the Soviet Union Academy of Sciences, a Stalin Prize winner and deputy of both Supreme Councils.

He graduated from the medical faculty in 1906, receiving his M.D. degree in three years. After studying physiology in Paris, he was elected, in 1912, professor of general pathology and bacteriology in the Saratov University. In 1928 he was appointed to the Chair of Pathology in the Second Moscow Medical Institute, and two years later he was elected president of the Ukrainian Academy of Sciences at Kiev. There he organized the Institute of Experimental Biology and Pathology, of which he was director until his death.

Bogomolets wrote many scientific works and many were published by his famous school of pathophysiologists on such subjects as metabolism, allergy, nervous regulation of the vegetative functions, pathophysiology of hypertension and premature senility. The chief studies of Bogomolets and his collaborators concerned connective tissue, and they resulted in a method for treatment of various conditions by means of antireticular cytotoxic serum (ACS). This serum is made from the blood of horses which previously had received a spleen preparation that stimulates the activity of connective tissue. ACS helps in the healing of fractures, wounds and ulcers by improving the nourishment of cells.

The manual on pathophysiology written by Bogomolets is widely used by Soviet physicians and medical students. In a special decision, the Council of Ministers of the Soviet Union resolved that Bogomolets's name be honored at the Kiev Medical Institute and the Institute of Experimental Biology and Pathology. To perpetuate his memory an annual prize of 25,000 rubles ($5,000) is to be awarded by the Ukrainian Academy of Science. Thirty scholarships in his name are to be instituted for postgraduates, and his scientific work will be published by the Ukrainian Academy of Sciences during the years 1946 to 1948.

DENMARK

(From Our Regular Correspondent)

Copenhagen, Dec. 9, 1946.

The Danish Medical Association

A recent report on the activities of the Danish Medical Association, with a membership of 4,239, reveals a varied spectrum with helpfully disinterested advice at one end, gently chiding admonitions in the middle and stern disciplinary measures at the more somber end. Somewhere in the middle of this spectrum is the problem raised by a local branch of the association anxious to obtain from its central council a ruling on what part, if any, is to be played by the medical profession in beauty culture. It was asked, can a doctor act as judge at an examination conducted at an institute for beauty culture? The answer pointed out that though participation by the medical profession in the beautification of the nation is not directly prohibited by the rules of the association, such participation should be frowned at rather than smiled on, since some beauty experts have been tempted to puff themselves as having been "medically approved" in the sense that they have passed a medical examination on beauty culture. Among the instances requiring sterner measures is that of a physician who, during the occupation of Denmark by the Germans, acted as a locum tenens for a colleague in hiding from them. A rebuke was administered to the locum tenens for having exploited his colleague's embarrassment by exorbitant charges.

Supervision of Medical Notes in the Lay Press

During a general debate at a recent meeting of the Danish Medical Association, the suggestion was made that this body should appoint a press secretary to act as a watchdog on incorrect and misleading medical news in the lay press. The Danish Medical Association has for many years collected press cuttings, and the above suggestion aimed merely at extending this activity. The lack of enthusiasm for this suggestion was most effectively voiced by one speaker who said that a medical press secretary who attacked every little mistake in regard to medical matters in the lay press would succeed in making himself a nuisance without really helping to educate the public. An official denial appearing in the lay press would, as a rule, just draw attention to some trifle which the public had already forgotten. One the other hand, the editor of the journal of the Danish Medical Association (*Ugeskrift for læger*) Dr. Mogens Fog said he would like the lay press to be free to cull medical news from the medical press.

Fees for Locum Tenens

In 1939 a scale of charges for a locum tenens was drawn up by the Danish Medical Association with the intention of preventing abuses at either end of the scale. But since then terms have so often been agreed on between the interested parties without reference to the official scale that its further maintenance has seemed questionable. Not only has the Danish Medical Association often been left out of the picture altogether in negotiations between the contracting parties, but the journal of the Danish Medical Association has actually been employed as a medium for advertising locum tenens terms incompatible with the association's rules. To put an end to this unconstitutional state of affairs, the association has recently discussed two possibilities. The first and least attractive is to let the laws of supply and demand dictate terms. If this is done a locum tenens can force prices up when physicians are few and the other side can force prices down when physicians are many. The outcome of such a state of affairs would, in the opinion of the association, be so unsatisfactory that it would be wiser to adopt the second alternative and definitely to brand as unethical those agreements which fail to comply with the rules laid down by the association. However, it is pointed out that such rules should not apply to hospital appointments or to a specialist employing a locum tenens.

Responsibility for Appendicitis Mortality

Though Denmark has a population of only 3.9 millions, there were as many as 283 deaths from appendicitis in 1944. In the same year there were some 2,100 patients treated for appendicitis in the hospitals of greater Copenhagen. Among these patients there were 48 deaths, 28 due to peritonitis. Dr. Mogens Ingerslev of Surgical Department A at the Bispebjerg Hospital has recently undertaken an investigation of what befell the 221 patients with appendicitis treated in his hospital before Feb. 1, 1946. The title of his study, Responsibility for the Mortality of Acute Appendicitis, gives an accusatory tone to his study. He classifies his 221 patients according to the interval between the onset of pain and the request for medical aid. In 50 cases the correct diagnosis was not made at a physician's first visit, and these cases are classified according to the interval between the first and second visit of the physician. The 221 cases are also classified according to the general condition of the patient on admission to the hospital and the degree and localization of the pain. It was noteworthy that in as many as 71 cases there was a history of one or more previous attacks. The final conclusion to which Dr. Ingerslev comes is that appendicitis mortality is not going to be greatly reduced by sulfonamide preparations, penicillin and the like but by application of the three golden rules: early diagnosis, early admission to a hospital and early surgical intervention.

Correspondence

POSITIONS IN PUBLIC HEALTH

To the Editor:—The practice of public health is becoming recognized as a specialty of medicine by both the profession and the public. The medical profession is taking the leadership in the promotion of adequate health departments staffed by well qualified, well trained people and is insisting that there be medical direction of these health departments. Government is recognizing the soundness of this principle and many recent appointments are evidence that government wishes to entrust the responsibilities for its public health only to physicians who are qualified by training and experience to assume the administrative position of health officer.

In The Journal, Dec. 22, 1945, page 1161, Dr. Thomas Parran, Surgeon General of the United States Public Health Service, pointed out the lack of qualified physicians in this specialty and emphasized the career opportunities available to young physicians who wish to practice this type of medicine. The New York State fellowship program is the result of recognition of the need for adequately qualified public health physicians to carry out the duties of full time health officers.

This training program consists of six or more months' field experience under the direct supervision of a medical health officer of the state department of health followed by an academic year at one of the postgraduate schools of public health. During the field training the physician on fellowship is afforded the opportunity to conduct epidemiologic investigations of outbreaks of communicable disease and to assist in the application of control measures. He observes and participates in community control measures, such as mass immunization or mass tuberculosis case finding. He ascertains the value of statistics in measuring the health of the community and the effectiveness of his work. He participates in the educational methods which are practiced to make the scientific aspects of preventive medicine applicable to every day community improvement of health. He is instructed in business and administrative principles and procedures necessary to carry on the functions of a well organized health department. Recognition is given to the need for correlation of the community practice of medicine by the health officer, with the clinical practice of medicine by the private practitioner. This period of field training is in effect a "residency in public health." After successfully completing this residency, he is enrolled in one of the schools of public health for one academic year, at the end of which he is eligible for the degree of Master of Public Health.

A careful selection of the applicants is made. The applicant for the fellowship must be a graduate of a school of medicine approved by the American Medical Association, must have served an internship of at least one year's duration in a hospital approved for such internship by the American Medical Association and must be licensed or eligible to take the examination for license to practice medicine in New York State. Some experience in the clinical practice of medicine is desirable but not required. He must be a citizen of the United States and should be not more than 35 years of age.

The fellowship is $295 per month for the field training period and either $200 or $300 per month during the academic training. The amount varies with whether or not the Fellow has dependents. Necessary travel and other expenses are paid by the department, and tuition at the school of public health is granted in addition to the stipend allowance.

Opportunities in the field of public health are greater than ever before. There are currently thirty-seven vacancies in state and local full time health officer positions in New York State, exclusive of New York City. Entrance positions in the New York State Department of Health carry a salary of $4,560 per year. Advancement within the department is usually rapid, and highly desirable positions in local health departments are usually filled from the staff of the state department of health. Full time local health officer positions in New York State pay an annual salary of $6,000 to $10,000. All appointments carry the benefits of civil service, including liberal vacation and sick leave and retirement income after the age of 60. Independent research in public health problems is an integral part of the activities of the department of health.

Thus an opportunity is offered to young physicians to enter public health as a career in New York State. Fellowships are still available and applications are invited. Now that physicians are returning from the armed forces and all new graduates of medical schools are no longer being taken into the Army and Navy, this unusual opportunity may not continue much longer. Further information can be obtained on application.

Franklyn B. Amos, M.D., Albany, N. Y.
Secretary, Executive Committee on Recruitment
and Training of Medical Personnel, Department
of Health, State Office Building.

THE PHYSICIANS' DESK REFERENCE OF MEDICAL ECONOMICS

To the Editor:—You probably have received a copy of the Physicians' Desk Reference Book to Pharmaceutical Specialties and Biologicals for 1947, published by Medical Economics, Inc., Rutherford, N. J.

You will certainly be interested in reading the letter which I have written to the editor and of which I am enclosing a copy.

Being a neurologist, I just happened to mention two conditions which affect my own field of work. But I feel sure that the observation could be duplicated many times.

Karl Rothschild, M.D., New Brunswick, N. J.

The letter follows:

> I have received your Physicians' Desk Reference Book and I want to compliment you on the general excellence of the presentation of material.
>
> Permit me, however, to make a few remarks which I think are of importance:
>
> I had the opportunity to look into the blue section under the heading of Myasthenia Gravis. If the index is worth anything, it should certainly mention Prostigmine as the primary and, as I believe, the *only* remedy for this disease, the other mentioned therapeutic measures being at best only adjuvants. *In fact* the Intocostrin (Squibb) is definitely contraindicated and if you will look up the white section of the book you will find that it is recommended as a test in judicious hands only. An inexperienced reader might certainly be very much misled. I feel that the words "for testing" should be added to the listing on page 201.
>
> In the same way, under Narcolepsy I miss any mention of Benzedrine, which certainly is known as the primary therapeutic agent for this disease.
>
> The fact that the firms of Hoffmann-La Loache and Smith, Kline and French have not contributed to the white section *should, in my opinion,* not prevent you from being fair and giving the doctors a true picture of the pharmaceutical specialties in the proper indications.
>
> A thorough revision of the P. D. R. in this respect will be absolutely necessary if the index shall serve the purpose to which you lay claim.
>
> Karl Rothschild, M.D.

DENTAL BENEFITS UNDER COMPULSORY INSURANCE

To the Editor:—In the British *Dental Magazine and Oral Topics* (**63:**206 [Oct.] 1946) the following interesting item occurs:

> In Great Britain a committee had gone into the question of dental benefit under the British National Health Insurance Act, and the following was a quotation from their report:
>
> "Roughly two thirds of the insured population, that is, between thirteen and fourteen million people, are entitled to dental benefit, but only 800,000 (less than 7 per cent) of these claim it on an average each year."

It has always been my contention that making health services available and "free" is not enough. In our small health department clinics here in Birmingham we have to police some 10,000 syphilitic patients every year to make them return to the clinics and take at least the minimum required treatments. Our first duty seems to be to teach the public the value of health. Were it deemed as valuable as liquor, tobacco, cosmetics or stainless steel jewelry, its availability would be certified. What socialized medicine wouldn't do for people, and what it would do to them still has not been made plain to the public at large.

The magazine also contains (p. 176) a most amusing forecast of British dentistry in the form of pages from a dentist's diary in 1961, strangled in red tape regulations.

Daniel W. Josselyn,
408 Broadway, Edgewood,
Birmingham 9, Ala.

INTRAUTERINE RESPIRATION OF THE FETUS

To the Editor:—We are interested in the paper of Davis and Potter on "Intrauterine Respiration of the Human Fetus" which appeared in The Journal August 10. On the basis of our own experiments of this nature we feel that the evidence which they present fails to be convincing on at least three counts:

First, the proponents of the thesis that the fetus normally aspirates amniotic fluid in utero cite Ahlfeld's early paper on the observability of fetal respiratory movements through the intact maternal abdomen during the later stages of pregnancy. Yet rarely does an obstetrician encounter this phenomenon. If the authors themselves observed such movements in their own series, they fail to report them. It is our belief that if and when movements are observable the fetus may be in a state of mild anoxic distress. May it be that their late fetuses did not execute respiratory movements until the time of operation?

Secondly, the experiments lack sufficient controls. In 3 of the 4 control fetuses the authors failed to observe the presence of thorotrast in the respiratory tract; however, it is interesting that these controls were as small as or smaller (7.5 to 12 cm. in length) than the youngest fetus in which thorotrast was found in the lungs. The authors indicated the necessity for adequate concentration of thorotrast in the amniotic fluid in order to produce a visible lung shadow, yet in this control series the dilution was at its lowest level (12 cc.). In the youngest fetus showing good shadows, 35 cc. was used. They are not justified in concluding that the presence of thorotrast in the lungs is unrelated to the experimental or operative procedures.

In the third place, they failed to do the one thing which would have provided the best answer to their question and would have made their case more convincing had they then observed thorotrast in the fetal lung. They did not take roentgenograms of the fetus at regular intervals through the intact maternal abdomen. Knowing that it takes very little operative handling to disturb blood-gas relationships in animal fetuses in utero, we are inclined to believe that the aspiration observed by the authors occurred only during operation or delivery at cesarean section.

Our own experiments indicate that, when one clamps the trachea of an animal fetus immediately on incising the uterus, the histologic picture of the lungs of such fetuses is entirely different from any of the histologic pictures presented in this article (see paper by Whitehead, Windle and Becker, *Anat. Rec.* **83**:255 [June 25] 1942). The lung of the normal apneic fetus is apparently in complete atelectasis with unexpanded respiratory bronchioles, alveolar ducts and alveolar sacs. On the other hand, we do find amniotic contents aspirated and the respiratory passage dilated whenever any factor, even very slightly, intervenes at operation to alter the blood-gas relationships sufficiently to stimulate the respiratory center and initiate respiratory movements in amnio.

William F. Windle, Ph.D.
R. Frederick Becker, Ph.D.
Department of Anatomy,
University of Washington School of Medicine,
Seattle.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS
EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Boards in Specialties were published in The Journal, Jan. 4, page 59.

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, Jan. 21-23. Sec., Dr. B. F. Austin, 519 Dexter Ave., Montgomery.

Arkansas: * *Medical. Examination.* June 5-6. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, June 5. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

California: *Examination.* Los Angeles, March 10-13. Sec., Dr. Frederick N. Scatena, 1020 N. St., Sacramento 14.

Connecticut: * *Medical. Examination.* Hartford, March 11-12. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven. *Homeopathic.* Derby, March 11. Sec., Dr. J. H. Evans, 1488 Chapel St., New Haven.

Delaware: *Examination.* Dover, Jan. 14-16. *Endorsement.* Dover, Jan. 21. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

Georgia: Atlanta and Augusta, June. Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

Hawaii: Honolulu, Jan. 13-16. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu 53.

Idaho: Boise, Jan. 14. Dir., Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg., Boise.

Illinois: Chicago, Jan. 28-30. Supt. of Registration, Department of Registration & Education, Mr. Philip Harman, Springfield.

Indiana: *Examination.* Indianapolis, June. Exec. Sec., Board of Medical Registration and Examination, Miss Ruth V. Kirk, 627 K. of P. Bldg., Indianapolis.

Maine: Portland, March 11-12. Sec., Board of Registration of Medicine, Dr. A. P. Leighton, 192 State St., Portland.

Massachusetts: Boston, March 11-14. Sec., Board of Registration in Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston 33.

Minnesota: * Minneapolis, Jan. 21-23. Sec., Dr. J. F. Du Bois, 230 Lowery Medical Arts Bldg., St. Paul 2.

Missouri: *Examination:* Kansas City, Jan. 27-29. Exec. Sec., Department of Education, Mr. John A. Hailey, State Capitol Bldg., Jefferson City.

Montana: Helena, April 1-2. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.

Nebraska: * *Examination.* Omaha, June 1947. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, State Capitol Bldg., Lincoln.

Nevada: *Examination.* Carson City, May 5. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

New Hampshire: Concord, March 13. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

New Jersey: Trenton, June 17-18. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

New Mexico: * Santa Fe, April 7-8. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

New York: Albany, Buffalo, New York and Syracuse, Jan. 27-30. Sec., Dr. Jacob L. Lochner, Education Bldg., Albany.

North Carolina: *Endorsement.* Raleigh, Jan. 16. Act. Sec., Mrs. L. McNeill, 226 Hillsboro St., Raleigh.

Oklahoma: * *Reciprocity.* Oklahoma City, Dec. 29-30. Sec., Dr. J. D. Osborn Jr., Frederick.

Oregon: * Portland, Jan. 22-25. Exec. Sec., Miss L. M. Conlee, 608 Failing Bldg., Portland 4.

Pennsylvania: Philadelphia and Pittsburgh, July. Acting Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

Rhode Island: * Providence, Jan. 2-3. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

South Dakota: * Pierre, Jan. 21-22. Sec., Dr. Gilbert Cottam, State Capitol Bldg., Pierre.

Texas: *Examination.* Galveston, Feb. 20-22. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

Vermont: *Examination.* Burlington, Jan. 31-Feb. 1. Sec., Board of Medical Registration, Dr. F. J. Lawliss, Richford.

Washington: *Examination.* Seattle, January 1947. Sec., Mr. Nelson Vaughn, Olympia.

Wyoming: Cheyenne, Feb. 3. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

---

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Connecticut: Feb. 8. Address State Board of Healing Arts, 250 Church St., New Haven.

District of Columbia: Washington, April 21-22. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

Florida: May 31. Sec., Dr. M. W. Emmel, University of Florida, Gainesville.

Iowa: Des Moines, Jan. 14. Corresponding Sec., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

Nebraska: Omaha, Jan. 14-15. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

New Mexico: Santa Fe, Feb. 2. Secretary, State Capitol, Santa Fe.

Oregon: Portland, March 1. Sec., Board of Higher Education, Mr. C. D. Byrne, University of Oregon, Eugene.

Rhode Island: Providence, Feb. 12. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Dental Practice Acts: Revocation of License After Conviction for Rape.—The South Carolina State Board of Dental Examiners alleged that the defendant had been guilty of immoral or dishonorable conduct and asked that his license to practice dentistry be revoked. From a judgment in the trial court in favor of the defendant, the State Board of Dental Examiners appealed to the Supreme Court of South Carolina.

The defendant was licensed to practice dentistry in 1937, and he practiced his profession in South Carolina until September 1943, when he was convicted of rape, sentenced and later pardoned The defendant admitted that he had been convicted of rape but denied that he was guilty. At the trial the Board offered in evidence the indictment, the verdict of guilty endorsed thereon and the sentence imposed by the court. A resolution of the Dental Board stating that on the record of the conviction the Dental Board believed that the defendant "has been guilty of immoral and dishonorable conduct which would prevent it from issuing to him a certificate to practice" was also offered in evidence. Oral evidence was introduced from various officers of the Dental Board to the effect that a license to practice dentistry would not have been issued to the defendant in the first instance had he been previously convicted of rape as shown by the court record.

The defendant first argued that a judgment in a criminal prosecution cannot be received in a subsequent civil action to establish the truth of the facts on which it was based and contended, therefore, that he was entitled to a trial *de novo.* While some courts have rigidly adhered to such general rule, said the Supreme Court, many others have relaxed or modified the rule in certain cases to the extent of permitting the introduction of the criminal conviction as prima facie evidence of the facts involved, and in at least one jurisdiction the judgment of conviction has been held to be conclusive. Continuing, the Court said that the state has a right under its police power to define the qualifications one shall possess in order to engage in the practice of dentistry and, in doing so, may properly require that such a person not only possess the necessary technical skill but also the qualifications of honor and good moral character. Proceedings to revoke a professional license are not an effort to further punish for the same offense one who may already have been punished but are a rightful exercise of the power of the state to protect its citizens from practitioners who do not possess the necessary qualifications. For all practical purposes, said the Supreme Court, the parties in the present proceeding are the same as those in the criminal proceeding. The defendant has had his day in court and has been convicted with all the safeguards thrown around a person accused of crime. The question of his guilt here is precisely the same as it was when determined adversely to him under circumstances most favorable to himself—that is, in a prosecution in which he could not have been convicted unless his guilt had been shown beyond a reasonable doubt. The reasons generally assigned for not giving a judgment of conviction conclusive effect have no application to the instant case, and no good reason appears why defendant should not now be permitted to collaterally attack the judgment of conviction.

The defendant next argued that the Dental Board possesses no inherent power to revoke the license of a dentist. The Dental Practice Act empowers the circuit judge to revoke or suspend the license of a dentist who "has been guilty of any immoral or dishonorable conduct which would prevent the board, in its sense of honor, from issuing the certificates of practice provided for" in section 5199. When one has been duly convicted in the court of general sessions of a felony, we do not think, said the Supreme Court, that the statute contemplates that his guilt or innocence shall again be determined by the circuit judge in a revocation proceeding. If the defendant was now applying for a license to practice dentistry and possessed all the necessary professional skill, but some years previously had been convicted of rape, it would not be necessary for the Dental Board, a body wholly unlearned in the law and in legal procedure, to disregard the solemn adjudication of guilt made by the court of general sessions, the regular tribunal established under the constitution of this state for the trial of such cases, to try the case again and determine anew the defendant's guilt before it would be warranted in declining to issue a license on the ground that the applicant did not possess the necessary moral character. The conviction is evidence, and we think conclusive evidence, that the defendant did commit the offense.

Finally the defendant takes the position that neither the Dental Board nor the court is authorized under section 5210 to revoke a license to practice dentistry on the sole ground that the holder of the license has been convicted of a crime involving moral turpitude. The point is emphasized that the statute does not use the word "convicted," but reads "has been guilty of any immoral or dishonorable conduct." It may be that the legislature, in framing the statute in question, chose the word "guilty," instead of "convicted," so as to include as a ground for removal or suspension "immoral or dishonorable conduct" of such nature that it would not constitute an indictable offense. But whether or not this was the legislative intent we need not now decide, for manifestly it was intended to include such "immoral or dishonorable conduct" as rape, a felony at common law. We think, said the Supreme Court, the defendant's suggested construction of the statute is illogical and unreasonable and, if adopted, would lead to a result which obviously was not intended by the legislature.

In conclusion the Supreme Court said that another hearing before the circuit judge should be held, at which it will be conclusively presumed that the defendant "has been guilty" of rape. Such constitutes a proper ground for the revocation or suspension of his license. At such hearing, the court continued, the circuit judge will determine whether the defendant's license should be revoked or whether it should be suspended; and if he concludes there should only be a suspension, he shall further determine and fix the term of such suspension. Accordingly, the judgment in favor of the defendant was reversed and the cause remanded.—*South Carolina State Board of Dental Examiners v. Breeland, 38 S. E. (2d) 644 (S. C., 1946).*

Food and Drug Acts: Drugs Misbranded by Accompanying Circular.—The defendant was found guilty of misbranding his drugs in violation of the Federal Food, Drug and Cosmetic Act, and judgment was entered by the district court, S.D. California, central division.

The drugs involved in this case were shipped in interstate commerce on April 25, 1944. However, descriptive leaflets and circulars concerning the material, which amounted to a misbranding of the drugs, had been shipped in interstate commerce the preceding February. The circulars and the drugs had a common source and common destination and were subsequently displayed together. The sole issue, said the court, is whether the drugs and leaflets accompanied each other within the purview of the food and drug act.

In a prior case, the United States circuit court of appeals said:

> The word "accompany" is not defined in the Act, but we observe that among the meanings attributed to the word are "to go along with," "to go with or attend as a companion or associate" and "to concur in association with," Webster's New International Dictionary, 2d Ed.

The food and drug act, continued the district court, has always been liberally construed to protect the consuming public from the avaricious. Prior cases indicate that the courts have not applied the usual rule of strict construction of criminal statutes to this act but have given it a liberal construction and thus enabled the act to accomplish its remedial purpose of protecting the public's health and pocketbook against misbranded foods and drugs. I hold, the court concluded, that the word "accompany" as used in the act means that when a drug and a related circular, having a common source and a common destination, come together at their destination, they are united and become one in so far as the buying public is concerned, each, in effect, accompanying the other, whether they arrived at their common destination simultaneously or otherwise. Accordingly the defendant was found guilty of misbranding a drug contrary to the federal food, drug and cosmetic act.—*United States v. Alberty, 65 F. Supp. 945 (Calif., 1946).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Alabama State Medical Assn. Journal, Montgomery

16:129-156 (Oct.) 1946

Early Diagnosis of Brain Tumors. W. G. Haynes.—p. 129.
Rheumatic Heart Disease in Children: Recent Advances in Management. J. H. Baumhauer.—p. 135.
Treatment of Whooping Cough. C. K. Pitt.—p. 139.

16:157-192 (Nov.) 1946

Alabama Postwar Planning (Symposium): Part. I. The Situation. M. S. Davie—p. 157.
Id.: Part II. Volunteer Prepayment Insurance. C. A. Grote.—p. 160.
Id.: Part III. Alabama Hospitals. B. F. Austin.—p. 163.
Role of Medical College of Alabama in Alabama Medicine. R. R. Kracke. —p. 168.
Application of Rh Factor in General Practice. A. E. Thomas and J. W. Perry.—p. 173.

American Heart Journal, St. Louis

32:411-544 (Oct.) 1946

Relation Between Circulation Time and Amount of Residual Blood of Heart. B. Gernandt and G. Nylin.—p. 411.
Heart in Primary Systemic Amyloidosis. S. Lindsay.—p. 419.
Observations on Pathogenesis of Edema in Cardiac Failure. F. Reichsman and H. Grant.—p. 438.
Coronary Sinus Rhythm. D. Scherf and R. Harris.—p. 443.
Abnormalities of Respiratory Pattern in Patients with Cardiac Dyspnea. H. E. Heyer.—p. 457.
*Influence of Age on Blood Pressure: Study of 5,331 White Male Subjects. H. I. Russek, M. M. Rath, B L. Zohman and I. Miller. —p. 468.
T Wave of Precordial Electrocardiogram at Different Age Levels. R. M. Suarez and R. M. Suarez Jr.—p. 480.
*Disadvantages of Thiouracil Treatment of Angina Pectoris. J. R. DiPalma and J. J. MaGovern.—p. 494.
Cardiovascular Defects in Selective Service Registrants. R. H. Eanes, K. H. McGill and M. L. Clark.—p. 504.

Influence of Age on Blood Pressure.—Russek and his co-workers analyzed the blood pressure of 5,331 men between the ages of 40 and 95. They found that normal systolic blood pressure tends to increase with age. The frequency of upper levels of "normal" (140 to 149 mm.) rises appreciably with advancing years. The assumption that normal diastolic blood pressure increases with age is unfounded. Actually a progressive decrease occurs with succeeding decades. The rise in normal systolic pressure and concomitant fall in normal diastolic pressure are primarily the result of progressive diminution in the elasticity of the aorta and its large branches (vascular factor). Physiologic changes in the central nervous system leading to vascular hyperreactibility with advancing years similarly exert an important influence on the blood pressure trends (neurogenic factor). Both mechanisms (vascular and neurogenic) are summated in their effect on systolic blood pressure while exerting opposing influences on diastolic blood pressure. Although the ceiling for normal diastolic blood pressure has been set at 90 mm. of mercury, an even lower level appears applicable after middle age.

Disadvantages of Thiouracil Treatment of Angina Pectoris.—DiPalma and MaGovern employed thiouracil in the treatment of 8 nonhypertensive cardiac patients with anginal pain, all but 1 of whom had normally functioning thyroids. In 4 patients the thiouracil treatment was stopped after less than two months because of toxic skin rashes, severe dyspnea and failure to lower the basal metabolic rate. No benefit on either precordial pain or exercise tolerance was experienced by these 4 patients. The 4 remaining patients were treated for over a year. In general, precordial pain was beneficially affected, at least for a time; at certain times exercise tolerance was doubled and even quadrupled. However, all except 1 lost the increased ability to do work at the end of the one year period. One patient had symptoms resembling coronary occlusion. The disadvantages of thiouracil in patients with normally functioning thyroid glands include toxicity, necessity of close supervision, inability to lower the metabolism, tendency toward water retention (which is deleterious to cardiac patients) and necessity of continuous therapy. Thiouracil is not recommended for angina pectoris as a routine procedure but only when the metabolic rate is elevated.

American Journal of Clinical Pathology, Baltimore

16:477-534 (Aug.) 1946

Recent Developments in Knowledge of Rh-Hr Blood Types: Tests for Rh Sensitization. A. S. Weiner.—p. 477.
Rh Factor as Applied to Operation of Blood Banks. L. J. Unger, M. Weinberg and M. Lefkon.—p. 498.
Alloxan in Experimental Hemochromatosis. P. A. Herbut, J. S. Watson and Ella Perkins.—p. 506.
Physiologic Study of Hematopoiesis in Duck with Malaria. H. H. Rostorfer and R. H. Rigdon.—p. 518.
Development of Resistance to Streptomycin by Aerobacter Cloacae. M. W. Edwards and G. D. Kirk.—p. 527.

16:535-596 (Sept.) 1946

Absorption of Vitamin A Following Enteral Use of Prostigmine in Cystic Fibrosis of Pancreas. H. D. Palmer, W. H. Danielson, Lula O. Lubchenco and E. L. Binkley.—p. 535.
*Observations on Response of Macrocytic Anemias to Folic Acid Therapy. L. Berman, S. D. Jacobson and E. C. Vonder Heide.—p. 550.
Malignant Lymphoma: Analysis of 202 Cases. C. A. Hellwig.—p. 564.
Rh Incompatibility in Heterospecific Pregnancy. J. Gurevitch, Z. Polishuk and D. Hermoni.—p. 574.
Observations on Human Malnutrition. V. D. Sneeden.—p. 580.
Radiation Effects of Atomic Bomb Among Natives of Nagasaki, Kyushu. J. S. P. Beck and W. A. Meissner.—p. 586.

Folic Acid in Macrocytic Anemias.—Berman and his associates used synthetic folic acid in treating 11 patients with macrocytic anemia. They found that those with megaloblastic bone marrow responded to folic acid therapy, but those with normoblastic bone marrow did not respond. They present morphologic criteria for distinguishing megaloblastic from normoblastic erythropoiesis and discuss the chemical and physiologic differences between megaloblasts and normoblasts. Recognition of the presence or absence of megaloblastic development of erythrocytes in the marrow will make it possible to foretell which patients will respond to folic acid.

American J. Digestive Diseases, Fort Wayne, Ind.

13:311-340 (Oct.) 1946

Control of Muscle Spasm and Arthritic Pain Through Sympathetic Block at Nasal Ganglion and Use of Adenylic Nucleotide: Contributions to Physiology of Muscle Metabolism: II. S. L. Ruskin.—p. 311.
Physiologic Derangements in Organic Disease of Intestinal Tract. S. Standard.—p. 320.
*Proctalgias and Allied Noninflammatory Perianal Dyscrasias: Coccygodynia Proctalgia Fugax, Neurogenic Pruritus Ani. E. Granet.—p. 330.
*Pyrosis: Analysis of Its Clinical Significance and Pathogenesis. G. W. H. Schepers.—p. 333.

Proctalgias and Perianal Dyscrasias.—Granet discusses several anal or rectal syndromes not of neoplastic or inflammatory origin. He mentions among others the relationship of coccygodynia to spastic contraction of the muscles attached to the coccyx and in some instances to a bursitis involving these muscles. Treatment by massage of the spastic muscles results in rapid relief of pain and muscle relaxation. In proctalgia fugax attacks of pain are sudden, sometimes awakening the patient out of sleep. Spasm in the region of the rectosigmoidal junction is suggested as the cause, and its psychosomatic nature seems well established. Glyceryl trinitrite or similar antispasmodics may prove effective in therapy. Chronic recurrent anal pruritus occurs in individuals with personality difficulties. This type of neurogenic pruritus may yield to psychotherapy.

Pyrosis.—Schepers reviews the clinical features observed in 100 patients in whom pyrosis was a chronic complaint. He was able to distinguish at least three pathologic conditions which are interdependent in respect to pathogenesis or etiology. In 50 per cent of the cases the endocrine dysfunction could be regarded as the major condition, pathologic change in the urinary tract was the basic feature in 38 per cent, and in the remaining 12 per cent alimentary tract disease could be incriminated. The author argues that pyrosis may represent a variety of visceral paresthesia referred to the gastric terminals of the splanchnic or the vagal nerves and localized and exteriorized to the terrains of the seventh, eighth and ninth thoracic somatic nerves through the central association between the greater sphlanchnic nerve and the corresponding spinal segments. In this series of cases it was associated with peripheral paresthesias, which responded to the same treatment as that which alleviated the pyrosis.

American Journal of Hygiene, Baltimore

44:183-312 (Sept.) 1946

Epidemic Pneumococcal Pneumonia: I. Description of Epidemic. R. G. Hodges and C. M. MacLeod.—p. 183.
Id.: II. Influence of Population Characteristics and Environment. R. G. Hodges and C. M. MacLeod.—p. 193.
Id.: III. Pneumococcal Carrier Studies. R. G. Hodges, C. M. MacLeod and W. G. Bernhard.—p. 207.
Id.: IV. Relationship of Nonbacterial Respiratory Disease to Pneumococcal Pneumonia. R. G. Hodges and C. M. MacLeod.—p. 231.
Id.: V. Final Consideration of Factors Underlying the Epidemic. R. G. Hodges and C. M. MacLeod.—p. 237.
Serologic Detection of Murine Typhus in Flea Feces. M. Pollard, D. E. Davis and T. A. Olson.—p. 244.
Effect of Dietary Carbohydrates on Dental Flora of Rat. Elizabeth I. Parsons, E. V. McCollum and M. Frobisher Jr.—p. 249.
Epidemiology of Acute Respiratory Infections Conditioned by Sulfonamides: VII. Effects of Sulfadiazine on Groups A and G Hemolytic Streptococci. M. Siegel.—p. 257.
Plasmodium Elongatum in Pekin Duck. F. Wolfson.—p. 268.
Studies of Plasmodium Cynomolgi in Rhesus Monkey Macaca Mulatta Fruma Wolfson and Mary Whitehead Winter.—p. 273.
Relationship Between the Number of Parasites and Parasitized Erythrocytes in Avian and Simian Malaria. Fruma Wolfson and Marie Cakrtova.—p. 301.

American Journal of Medical Sciences, Philadelphia

212:257-384 (Sept.) 1946

*Folic Acid (Synthetic L. Casei Factor), Essential Panhematopoietic Stimulus: Experimental and Clinical Studies. C. A. Doan.—p. 257.
Primary Systemic Amyloidosis: Jaundice as Rare Accompaniment. J. Orloff and L. Felder.—p. 275.
*Positive Reactions to Kahn Test for Syphilis—Their Incidence and Meaning in Healthy American Men: Survey of 82,070 U. S. Maritime Service Enrollees. I. J. Wolman.—p. 280.
Intestinal Parasites Diagnosed at Army General Hospital in South Pacific. M. Zarrow and H. Rifkin.—p. 289.
Effect of Graded Doses of Thyroxin on Experimental Goiters Induced by Promizole. G. M. Higgins and Olive R. Joneson.—p. 294.
Note on Hippuric Acid Synthesis in Senility. K. Stern, J. S. Tyhurst and Brigitte A. Askonas.—p. 302.
Activity of Penicillin in Intranasal Pneumococcus Infection of Mice. M. Buck, N. Ercoli, D. R. Kelly and others.—p. 306.
Succinylsulfathiazole in Nutrition of Rat. L. D. Wright and Helen R. Skeggs.—p. 312.
Effect of Citrate on Reactions of Lead with Blood Cells and Plasma. R. A. Mortensen.—p. 315.
Alteration of Electrocardiographic P Waves in Acute Rheumatic Fever. J. J. Sampson and P. C. Caplan.—p. 321.
Evidence of Maternal Rh Sensitization Without Evidence of Hemolytic Disease in the Newborn. D. H. Kariher and Dorothy I. Miller. —p. 327.
Response to Penicillin by Typhoid Carrier: Studies on Penicillin Sensitivity of Strains of Typhoid Bacilli. N. W. Riser, R. F. Farrington and B. B. Breese.—p. 331.
Bacteriologic, Clinical and Pathologic Experience with 86 Sporadic Cases of Salmonella Infection. A. Angrist and Mollie Mollov.—p. 336.
Hookworm Infections in Troops Returning from Pacific. H. Most, J. M. Hayman Jr. and T. B. Wilson.—p. 347.
Fibrocystic Disease of Pancreas. F. W. Wiglesworth.—p. 351.
Maternal Disease as Principle in Epidemiology of Congenital Anomalies, with Review of Rubella. W. L. Aycock and T. H. Ingallis.—p. 366.

Folic Acid (Synthetic L. Casei Factor) a Panhematopoietic Stimulus.—In analyzing clinical and experimental studies with folic acid as derived from spinach, liver, yeast, other natural sources and now the synthetic Lactobacillus casei factor, Doan found that it becomes increasingly apparent that we are dealing with one of the more fundamental molecules essential to the normal metabolism of all cell types in marrow and in young, actively growing cells and tissues generally. In the absence of "sufficient" L. casei factor due to extrinsic dietary deprivation or with intrinsic interference in absorption, a cellular inadequacy develops in mammalian bone marrow. Many other factors, including infections, modify the relative clinical stability or instability of each human organism. The physician must search for the "balance of power" among the knowable factors in the equation, and when this is done the problem can be solved.

Kahn Test for Syphilis in Healthy Men.—A survey has been made of the meaning of 783 positive reactions to the Kahn standard serologic test for syphilis encountered in a population of 82,070 consecutively examined male maritime enrollees aged 16 to 54. Study of the men with positive serums indicated that 40 per cent had single positive reactions of questionable authenticity, 13 per cent had nonsyphilitic persistently positive reactions, 7 per cent had congenital syphilis and 40 per cent had acquired syphilis. Thus in one laboratory the detection of a positive or doubtful response to a Kahn standard serologic test led to the diagnosis of syphilis in 47 per cent, or less than half, of a group of healthy American men. Weakly positive reactions proved to mean syphilis in only 20 per cent of the group, whereas strongly positive reactions proved to mean syphilis in 80 per cent of the group.

212:385-512 (Oct.) 1946

Thyroid and Blood Regeneration in Rat. A. S. Gordon, Patricia C. Kadow, Grace Finkelstein and H. A. Charipper.—p. 385.
Use of Radon Ointment in Treatment of Late Irradiation Ulcers. D. Kirsh, J. F. Mahoney and E. P. Pendergrass.—p. 395.
*Addison's Disease in the Negro. J. W. Conn and K. P. Mathews. —p. 404.
*Use of Agglutination Inhibition Test in Studying Effects of Vaccination Against Influenza. A. L. Florman, Agnes Poindexter and F. E. Council.—p. 409.
Electrocardiographic Effects of Prostigmine. D. Goldfinger and P. H. Wosika.—p. 418.
Toxic Effects of Prolonged Ingestion of DDT on Dogs, with Special Reference to Lesions in Brain. W. Haymaker, A. M. Ginzler and R. L. Ferguson.—p. 423.
*Late Neuronitis Following Proved and Suspected Cutaneous, Faucial and Wound Diphtheria. J. J. Sampson.—p. 432.
*Needle Biopsy of Liver. W. D. Davis, R. W. Scott and H. Z. Lund. —p. 449.
Plasma Proteins: I. Alteration in Diabetic Retinitis. R. W. Schneider, Lena A. Lewis and E. P. McCullagh.—p. 462.
Fallacy of the Exton-Rose Glucose Tolerance Test. P. H. Langner Jr., M. J. Romansky and E. D. Robin.—p. 466.
Analysis of Incidence and Causes of Death in Acute Psychopathic Hospital. L. Madow and J. Stouffer.—p. 471.
Effect of Aminophylline on Prothrombin Time in Man. R. W. Breytspraak and F. S. Greenspan.—p. 476.
Tumors of Skin: Part II. Review of Recent Literature. H. Beerman. —p. 479.
Decline of Acute Surgical Mastoiditis. N. D. Fabricant.—p. 506.

Addison's Disease in the Negro.—Conn and Mathews think that the occurrence of Addison's disease in the Negro is far greater than is indicated by the few cases reported in the literature. It is easily understandable that when dealing with Negro patients the possibility of Addison's disease would suggest itself less frequently than in the case of white persons, since pigmentation of the skin is usually one of the most striking manifestations of the disease. The authors report the occurrence of Addison's disease in 5 Negroes and stress that physicians should be on guard for the recognition of this disease in Negroes.

Agglutination Inhibition Test in Vaccination Against Influenza.—Immunologic data were obtained by Florman and his co-workers with the aid of an agglutination-inhibition test from 89 persons who had been given a concentrated influenza virus vaccine containing two type A (PR-8 and Weiss) strains and one type B (Lee). This information was analyzed in relation to clinical observations associated with the administration of the vaccine. Almost two thirds of the group complained of either local or systemic reactions shortly after vaccination. However, these symptoms did not seem to be the result of an antigen-antibody reaction involving agglutination-inhibition antibody. Two serologically proved instances of type B influenza infection occurred during the fifth week following vaccination. Both were in men who had not produced high levels of antibody for the B component of the vaccine. Agglutination-inhibition antibodies for the type A viruses tended to appear earlier than for type B. Administration of the vaccine did not change the Kahn flocculation serologic test for syphilis reagin titer in the 59 persons so studied. Three weeks after vaccination 83 (93 per cent) of the group had developed fourfold or greater rises in antibody for at least one component of the vaccine. The serums were also tested against recently isolated type A and type B viruses (Olsen and Saha). The results indicated either that the Saha strain is antigenically more nearly like the Lee than the Pr-8 and Weiss are like the Olson or that the antibody response evoked by the Lee virus is immunologically broader than that of the A strains in the vaccine. Among those who responded to the vaccine there were some who did so to all the components of the vaccine, some who did so only to certain ones and a few who did not produce antibodies to the viruses in the vaccine as well as they did for the related Olson and Saha strains. The unpredictability of this phenomenon presents a serious problem if the level of circulating agglutination-inhibition antibody produced is indicative of the amount of protection against infection afforded by a vaccine.

Late Neuronitis Following Diphtheria.—Sampson presents observations on 20 cases of late polyneuronitis which developed from one to three months after proved or suspected cutaneous or faucial diphtheria. This syndrome differs from the early diphtheria neuritis which occurs during or within the first month after the attack of diphtheria. Fifteen of the 20 patients had acquired the pharyngeal or cutaneous diphtheria in the Southwest Pacific. The initial symptoms usually were numbness and paresthesias of the hands and feet. Partial electrical reactions of degeneration of the involved muscles were obtained in all the severe cases. The segmental character of motor and sensory involvement, generally C_1 to T_2 and L_3 to S_1 during the early and most severe stages of the disease, receded to signs of irregular distal peripheral neuritis. Recovery was generally abrupt, and the commonest residual signs after four to seven months' observation were absent achilles and patellar reflexes and diminished vibratory sense in the toes. Massage and passive and active exercises throughout the course of the disease apparently hastened the return to normal motor function and prevented muscle atrophy.

Needle Biopsy of Liver.—Needle biopsies of the liver have been done on 68 patients in the Cleveland City Hospital since 1939. Biopsies have been most useful in the diagnosis of cancer of the liver and in establishing the nature of diffuse parenchymal liver disease, including cirrhosis. Fatalities were not observed in this series.

American J. Obstetrics and Gynecology, St. Louis

52:529-706 (Oct.) 1946. Partial Index

Controversial Factors in Management of Fundal Carcinoma. L. C. Scheffey, W. J. Thudium, D. M. Farell and G. A. Hahn.—p. 529.
Clinical Evaluation of Ectopic Pregnancy. A. A. Marchetti, Katherine Kuder and Alberta Kuder.—p. 544.
Endometriosis in Association with Pregnancy. F. R. Lock and R. T. Myers.—p. 556.
Manual Removal of Placenta: A Benign Procedure. C. W. Sewall and D. Coulton.—p. 564.
*Relationship of Maternal Weight Gain to Weight of Newborn Infant. J. Klein.—p. 574.
*Adenomyosis of Uterus: Study of 52 Reported Cases and Review of Literature. S. D. Spatt.—p. 581.
Complications and Fetal Mortality in 136 Cases of Multiple Pregnancy. E. W. Munnell and H. C. Taylor Jr.—p. 588.
Report on 2,798 Vaginal Hysterectomies. Z. B. Campbell.—p. 598.
Arrhenoblastoma of Ovary, with Report of 2 Cases. Georgianna Seegar Jones and H. S. Everett.—p. 614.
Study of 500 Vaginal Hysterectomies. H. C. Falk and I. A. Bunkin. —p. 623.
Analysis of 257 Cases of Sterility. S. G. Winson.—p. 631.
*Saddle Block Anesthesia with Nupercaine in Obstetrics. R. T. Parmley and J. Adriani.—p. 636.
Addition of Penicillin Sodium to Anesthetic Agent for Local Infiltration Anesthesia: Preliminary Report. V. J. Reynolds.—p. 641.
Psychoneurotic Symptoms Following Hysterectomy. F. Wengraf.—p. 645.
Respiration During First Hour of Life. R. H. Gottschalk.—p. 651.
*Early Puerperal Rising. A. G. King.—p. 657.
*Relation of Early Rising to Morbidity in Cesarean Section. D. M. Headings and R. E. Palmer.—p. 661.
Composition of Human Placenta: II. Lipid Content. J. P. Pratt, Mildred Kaucher, Elsie Moyer and others.—p. 665.
Effect of Essential Hypertension on Pregnancy. J. A. Sharkey and Catherine Hess.—p. 672.

Relationship of Maternal Weight Gain to Weight of Newborn Infant.—Klein studied 567 cases and found no correlation between the maternal weight gain during pregnancy and the weight of the baby at birth.

Adenomyosis of Uterus.—Spatt presents observations on 52 cases of adenomyosis uteri in which the endometrium was carefully examined, and he also reviews the literature. He concludes that adenomyosis uteri occurs in 5 to 10 per cent of all myomatous uteri. Like endometrial hyperplasia, it is most common in the fifth decade of life. Metromenorrhagia and dysmenorrhea are the most frequent complaints in adenomyosis uteri. Some patients have both these complaints. The sustained interval nonsecretory endometrium is a part of the process leading to endometrial hyperplasia. The early interval endometrium seems to occur in younger women and endometrial hyperplasia in older women. Adenomyosis is associated with anovulatory menstrual cycles in a large percentage of cases, indicating that either hyperestrinism or lack of corpus luteum hormone is an important factor in the genesis of adenomyosis uteri. It cannot be said definitely which one is responsible. The high incidence of fibroids in adenomyosis uteri seems to indicate some relationship; however, this association is not frequent enough to suggest that one factor is responsible for both.

Saddle Block Anesthesia.—The term saddle block anesthesia is applied to anesthesia confined exclusively to the perineal area. Parmley and Adriani used it with gratifying results in 135 normal primiparas or multiparas. They describe the technic for producing prolonged anesthesia and analgesia by using nupercaine. The ease and simplicity of induction, the safety allowed by the low dosage of the drug and the exact localization of the distribution of anesthesia make the use of this block the technic of choice where spinal anesthesia is preferred or desired in obstetrics.

Early Puerperal Rising.—The routine by which King prepared 221 women for early puerperal rising included standing for one minute the first day post partum, sitting in a chair for five minutes the second day, abdominal exercises in bed, and two five minute sitting periods the fourth day, walking about and toilet privileges on the fifth or sixth day, a shower the seventh day and discharge from the hospital on the eighth day when desired or necessary. The incidence of complications, subinvolution, prolonged lochia rubra, episiotomy breakdown, infections and uterine retroversion was not greater than usual. It is felt that early puerperal rising in uncomplicated cases of childbirth is desirable and without danger or unfavorable sequelae.

Early Rising and Morbidity in Cesarean Section.—Headings and Palmer found that when patients who had undergone cesarean section were allowed out of bed early the morbidity was only 2.8 per cent, compared with 9 per cent when early rising was not encouraged. No complications developed from the routine practice of getting all patients out of bed on the first postoperative day. Early rising allows full use of the available hospital facilities. The patients are grateful not only for lessened expense but also because of the definite improvement in the postoperative sense of well-being and avoidance of the weakness so noticeable in patients kept in bed twelve or fourteen days.

American Journal of Orthopsychiatry, New York

16:571-760 (Oct.) 1946

Psychologic Counseling of College Students. P. Blos.—p. 571.
Recent Research in Nondirective Therapy and Its Implications. C. R. Rogers.—p. 581.
Basic Aspects of Nondirective Therapy. A. W. Combs.—p. 589.
Directive and Nondirective Psychotherapy: Role of Therapist. H. H. Anderson.—p. 608.
Counseling and Therapy. L. G. Lowrey.—p. 615.
Consulting Psychologist in Industry. C. E. Evans.—p. 623.
Personality and Psychosomatic Disturbances Among Industrial Personnel. A. Weider and B. Mittelmann.—p. 631.
Observations from a Veterans' Clinic on Childhood Factors in Military Adjustment. J. S. Kasanin, C. Rhode and Ernestine Wertheimer. —p. 640.
Jealousy in Children. H. Vollmer.—p. 660.
Authority in Treatment of Delinquents. W. Bromberg and T. C. Rodgers. —p. 672.
Incidence of Hidden Delinquency. F. J. Murphy, Mary M. Shirley and Helen L. Witmer.—p. 686.
Agency Initiated Treatment of Potentially Delinquent Boy. Margaret G. Reilly and R. A. Young.—p. 697.
Brief Relationship Therapy in Military Setting. D. G. Prugh and B. Brody.—p. 707.

. American Journal of Physiology, Baltimore

147:1-236 (Sept.) 1946. Partial Index

Palmar Skin Resistance as Measure of Physical Fitness. E. R. Elbel and R. R. Ronkin.—p. 1.
Studies on Nutritive Value of Lactose and Galactose with Single-Food Choice Method. B. H. Ershoff.—p. 13.
Relation of Gas Tension and Hydrostatic Pressure to Intravascular Bubble Formation. W. D. McElroy and A. H. Whiteley.—p. 19.
Oxygen Consumption and Mechanical Efficiency of Heart Before and During Heart Failure. W. Wise, J. Meyer, L. N. Katz and others. —p. 28.
Absence of Rapid Deterioration in Moderately Active Young Men on Restricted Intake of B Complex Vitamins and Animal Protein. R. C. Cogswell, G. H. Berryman, C. R. Henderson and others.—p. 39.
Distribution of Water and Fat in Skin and Muscle of Dog During Chronic and Acute Dehydration. B. De Boer.—p. 49.
Arterial Oxygen Pressure During Pure O_2 Breathing. J. C. Fasciolo and H. Chiodi.—p. 54.
Biochemical Changes in Blood of Rats After Reapplication of Limb Tourniquets. R. K. Meyer, W. H. McShan, A. Goldman and E. G. Shipley.—p. 66.
Evidence That Major Portion of Gastric Potential Originates Between Submucosa and Mucosa. W. S. Rehm.—p. 69.
Comparative Study of Effects of Oxygen Lack on Peripheral Nerve. E. B. Wright.—p. 78.
Unitary Analysis of Pulmonary Volume Receptors. G. C. Knowlton and M. G. Larrabee.—p. 100.
Electrical Manifestations of Cerebellum and Cerebral Cortex Following DDT Administration in Cats and Monkeys. F. Crescitelli and A. Gilman.—p. 127.
Bicarbonate and Renal Regulation of Acid Base Balance. R. F. Pitts and W. D. Lotspeich.—p. 138.
Amino Nitrogen in Liver and Muscle of Rats in Shock After Hemorrhage. J. A. Russell and C. N. H. Long.—p. 175.
Determination of Physiologically Effective Pressures of Oxygen and Carbon Dioxide in Alveolar Air. R. L. Riley, J. L. Lilienthal Jr., D. D. Proemmel and R. E. Franke.—p. 191.
Carbon Dioxide Production of Humans at Sea Level and at Low Barometric Pressures. W. E. Berg and S. F. Cook.—p. 217.
Influence of Thiamine on Action of Acetylcholine on Muscle. D. P. Sadhu.—p. 233.

American Journal of Psychiatry, New York

103:145-288 (Sept.) 1946

Psychiatry in Industry. F. W. Dershimer.—p. 145.
Current Trends in Industrial Psychiatry. L. E. Himler.—p. 149.
Epilepsy: Treatment with New Drug: 3-Methyl 5,5-Phenyl-Ethyl-Hydantoin (Phenantoin). H. L. Kozol.—p. 154.
*Two New Drugs in Epilepsy Therapy. W. G. Lennox.—p. 159.
Further Observations on Use of Tridione in Control of Psychomotor Attacks. R. N. DeJong.—p. 162.
Incidence of Neuropsychiatric Disease in Demobilized Veteran: Study of 10,000 Army Separatees. J. F. Burton, M. T. Eaton Jr. and H. G. McMahan.—p. 165.
Rehabilitation of Military Offenders at Ninth Service Command Rehabilitation Center. I. I. Weiss.—p. 172.
Study of Modification of Mental Illness by Intercurrent Physical Disorders in 100 Patients. H. E. Clow and C. T. Prout.—p. 179.
Nail Biting: Incidence, Allied Personality Traits and Military Significance. J. M. Hill.—p. 185.
Psychosomatic Approach to Problem of Stuttering in Psychotics. D. A. Barbara.—p. 188.
Comparative Incidence of Neuropsychiatric Casualties in World War I and World War II. J. W. Appel, G. W. Beebe and D. W. Hilger. —p. 196.
Psychiatry in Hanford. W. A. Noehren.—p. 200.
Men with Brain Damage. J. A. Aita.—p. 205.
Japanese Military Psychiatry in Korea. M. M. Berger.—p. 214.
Prefrontal Lobotomy: Preliminary Appraisal of Behavioral Results. W. C. Halstead, H. T. Carmichael and P. C. Bucy.—p. 217.
**Transitory* Schizophrenias Produced by Bromide Intoxication. M. Levin. —p. 229.
Orbital Cortex Syndrome Following Leukotomy. F. Reitman.—p. 238.
Irrelevant and Metaphorical Language in Early Infantile Autism. L. Kanner.—p. 242.
Glucose Tolerance in Chronic Alcoholism. S. C. Karlan and C. Cohn. —p. 247.

New Drugs in Epilepsy Therapy.—The first of the two drugs which Lennox says *increase the range and the effectiveness* of the control of epileptic seizures is Tridione. This drug has proved peculiarly effective in the control of seizures of the petit mal type: pyknoepilepsy, myoclonic jerks and akinetic epilepsy. Eighty-four per cent of the patients with petit mal were to some degree better. In contrast, grand mal convulsions were not helped or made worse. Psychomotor seizures were occasionally aided by Tridione combined with an anticonvulsant drug. The second drug, methyl phenyl ethyl hydantoin (Mesantoin), did not help petit mal, but in approximately one third of patients subjected to frequent major seizures it has replaced diphenyl hydantoin sodium (Dilantin) with profit. The benefit resulted either from a reduction in the frequency of convulsions or from an absence of the unpleasant side effects of either muscular incoordination or gum hypertrophy. Generalized rash or somnolence were side effects which limited the usefulness of the drug in many instances.

Transitory Schizophrenias in Bromide Intoxication.—According to Levin, bromide intoxication produces a variety of psychiatric syndromes. A new syndrome is described by the author on the basis of 13 cases. This is a psychosis of predominantly paranoid coloring which, to the examiner who does not know the history and laboratory findings and has not yet seen the outcome, has all the earmarks of an "ordinary" paranoid schizophrenia, from which it differs only in that it is a transient psychosis which has supervened during bromide intoxication and clears up fairly soon after discontinuance of the drug.

American Journal of Public Health, New York

36:1105-1244 (Oct.) 1946

Trend of Tuberculosis Association Programs. L. I. Dublin.—p. 1105.
Procedure for Bacteriologic Examination of Brined, Salted and Pickled Vegetables and Vegetable Products. J. L. Etchells and I. D. Jones. —p. 1112.
Small Sample Surveys as Adapted to Cancer Program. Evelyn A. Potter.—p. 1124.
Contributions of War Experience to Our Knowledge of Mental Hygiene. G. S. Stevenson.—p. 1129.
*Treatment of Pediculus Capitis in School Children with DDT Powder. A. D. Kaiser.—p. 1133.
Eight Years' Experience in Licensing of Clinical Laboratory Technicians. M. H. Merrill.—p. 1135.
Penny Plan for Health Education in Industry. J. I. Boxer.—p. 1143.
Report on Hydrant Stops. L. G. Shields and F. G. Legg Jr.—p. 1147.
Factors Affecting the Susceptibility to Bacillary Dysentery. T. Thale and L. Opper.—p. 1150.
Epidemiologic Study of Outbreak of Pertussis in Public School. Anne Clark Rodman, W. L. Bradford and G. P. Berry.—p. 1156.

DDT for Pediculus Capitis in School Children.—*According to Kaiser pediculosis may be one of the greatest causes of absenteeism in schools. To simplify the treatment a preparation of* DDT powder (10 parts of DDT and 90 parts of inert powdered talc) was sprayed on the child's hair, a paper towel being placed over the eyes to prevent irritation. The head was kept covered until bedtime. In the morning the hair was combed with a fine comb to remove the dead lice and as many eggs as possible. On the seventh day another application of DDT powder is made, following a shampoo on the previous evening. At the end of the second week another application of DDT is made if necessary. Thus far 350 children have been treated with this method.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

56:419-554 (Oct.) 1946

Dynamic Concept of Thoracic Topography: Critical Review of Present Day Teaching of Visceral Anatomy. E. Lachman.—p. 419.
*Porencephaly. E. P. Pendergrass and C. R. Perryman.—p. 441.
Pneumatosis Intestinalis: Its Roentgenologic Diagnosis. H. H. Lerner and A. I. Gazin.—p. 464.
*Secondary Myelofibrosis with Progressive Generalized Osseous Eburnation. S. R. Bersack and H. R. Feinstein.—p. 470.
Roentgen Diagnosis of Volvulus of Sigmoid with Intestinal Obstruction. M. Ritvo and J. L. Golden.—p. 480.
Roentgen Diagnosis of Diseases of Neck of Bladder. A. Piereira. —p. 489.
How Exact Is Roentgen Diagnosis of Heart Valve Calcifications? L. Walk.—p. 500.
Effects of Beta Irradiation on Rabbit's Eye. W. F. Hughes Jr. and C. E. Iliff.—p. 502.
*Cancer of Cervix: Study of Effect of Interstitial Radon Needles as Compared with Roentgen Therapy Given Through Intravaginal Cones. H. C. Taylor Jr. and G. H. Twombly.—p. 513.
Treatment of Cutaneous Hemangioma with Radium. E. Caceres.—p. 523.

Porencephaly.—The 29 cases of porencephaly reviewed by Pendergrass and Perryman were all studied by encephalography and/or ventriculography, and in 16 craniectomy was done. Unilateral change in the thickness of the skull was the most common observation in the conventional roentgenograms of patients with porencephaly. The various types of porencephaly have been classified as "lobe," "interlobe" and "hemisphere." Cortical or subcortical atrophy, enlargement of the ventricles and arachnoiditis were found in association with porencephaly and may be contralateral, homolateral or bilateral and localized or generalized. There was usually a slight shift of the ventricles and midline structures more often to the same side but frequently to the opposite. Porencephaly must always be considered in the differential diagnosis of mass, cystic and contracting lesions involving the brain.

Secondary Myelofibrosis.—Bersack and Feinstein's patient was a man aged 55 who had secondary myelofibrosis with generalized osseous eburnation as a result of skeletal metastases of prostatic carcinoma. Only 2 similar cases have been presented in the English literature. The prognosis in such cases is worse than in the average carcinoma of the prostate. The course varies between one and one-half years. Myelofibrosis has two prerequisite elements; namely, destruction of bone marrow and an attempt at compensation by the remaining hemopoietic tissue, inclusive of metaplasia in the spleen and the liver. The cardinal symptoms are weakness, bone pains, a varying degree of splenomegaly and a refractory anemia with nucleated red blood cells and immature white blood cells in the peripheral blood. Histopathologically the involved bone shows an increase in width and number of the trabeculae, with linear calcium deposition. The lamellae present normal lacunae and bone cells. A conspicuous feature is the scarcity or complete absence of lining osteoblasts and osteoclasts. The marrow spaces contain fibrous tissue with sparsely scattered infiltrative foci of tumor cells.

Treatment of Cervical Cancer.—Taylor and Twombly divided all cases of primary cervical cancer observed in their gynecologic clinic during 1943 and 1944 into two equal and comparable groups. One group was treated with divided dose roentgen therapy to the pelvis and intravaginal roentgen therapy to the parametria and cervix through special cones. This program of roentgen therapy was followed by intracervical radium. The second group also received divided dose external roentgen therapy and intracervical radium, but the intravaginal roentgen treatments were replaced by interstitial radon therapy delivered by means of needles inserted into the parametria at the time the radium was applied to the cervical canal. The patients treated with needles had more severe rectal symptoms, more bladder symptoms and more local necrosis, hemorrhage and pain than did those treated with vaginal cones. Furthermore, the mortality was greater in those treated with needles, and the authors have abandoned this treatment in favor of the other one.

American Journal of Surgery, New York

72:497-634 (Oct.) 1946

*Importance of Sulfhydryl in Treatment of Corneal and X-Ray Burns. A. E. Cruthirds.—p. 500.
Total Excision of Patella for Fracture: Report of 14 Cases. W. R. MacAusland.—p. 510.
Anorectal Abscesses: Discussion and Treatment. J. F. Wenzel.—p. 517.
*Distal Ectopic Pregnancy: Implantation of Ovum in Cervical Mucosa. P. Schneider.—p. 526.
Comparison of Silk and Nylon as Suture Material. M. N. Foote, G. R. Gerst and S. W. Meyer.—p. 540.
Management of Sharp Pointed Foreign Bodies in Gastrointestinal Tract. R. R. Best.—p. 545.
Why Hernias Recur. A. H. Iason.—p. 550.
Vascular Trauma. E. E. Lazarus.—p. 562.
Traumatic Hemothorax. H. A. Brodkin.—p. 569.
Transverse Incision in Abdominal Surgery: Five Year Study. P. Pernworth.—p. 573.
Noninfectious Iliopectineal Bursitis. D. C. Hucherson and F. R. Denman.—p. 576.
Blood Cell Jel for Chronic Surface Ulcers. J. G. Kanski.—p. 580.
Diagnosis of Thenar Space Abscess. W. R. Moses.—p. 583.

Sulfhydryl in Treatment of Corneal and X-Ray Burns.—A study based on five years of clinical application of a sulfhydryl therapy in more than 500 cases of burns involving the eyes and adjacent areas has convinced Cruthirds that the danger of scarring may be greatly reduced. The product used, hydrosulphosol, presents sulfur in a "free" colloidal state with a high concentration of sulfhydryl suggesting availability of sulfur in a form that can be utilized by the body in the synthesis of sulfur-containing amino acids. Sulfur-containing compounds constitute almost one half of the mineral content of the lens and are connected with tissue respiration, oxygen transport, detoxication, capsular permeability, protein synthesis and general metabolic efficiency. In conjunction with penicillin, hydrosulphosol has proved effective also in corneal ulcers with results not observed with penicillin alone. There has been no evidence of toxic reactions following free and repeated application of this sulfhydryl bearing solution. Hydrosulphosol is superior to other methods in its ability to heal x-ray burns in that it heals with less chance of development of symblepharon, and it heals faster and without scarring and infection. The application of a 1:1 spray of hydrosulphosol solution establishes quickly a dry, flexible coating. This coating has proved to be the only covering needed.

Ectopic Pregnancy in Cervical Mucosa.—Schneider reviewed the literature since 1926 and found that in only 10 of 30 reported cases could cervical implantation be proved. These 10 plus the 1 reported by the author in 1926 and the 1 described here are the basis for the present discussion on the anatomic and clinical data of the cervical implantation of the ovum. This type of ectopic gestation is almost always associated with violent symptoms. Whether a cervical pregnancy terminates spontaneously by rupture of the extremely thinned cervical wall or by internal rupture of the gestation sac (abortion) or whether it is interrupted artificially, the leading and most alarming symptom is always the violent hemorrhage associated with it.

American Journal of Tropical Medicine, Baltimore

26:543-748 (Sept.) 1946. Partial Index

Military Amebiasis: Observations on Complete Courses of 40 Cases, with Results of Treatment. E. D. Palmer.—p. 543.
Diagnosis of Schistosomiasis Japonica: III. Technics for Recovery of Eggs of Schistosoma Japonicum. E. C. Faust and J. W. Ingalls, with Assistance of J. K. Sec.—p. 559.
Development of Virus of Yellow Fever in Hemagogus Mosquitoes. M. Bates and M. Roca-Garcia.—p. 585.
Laboratory Transmission of Yellow Fever Virus by Hemagogus Splendens. C. R. Anderson and E. Osorno-Mesa.—p. 613.
*Distribution of Murine Typhus in Rats and in Humans in San Antonio. D. E. Davis and M. Pollard.—p. 619.
Pathologic Study of Natural Amebic Infection in Macaques. V. P. Bond, W. Bostick, E. L. Hansen and H. H. Anderson.—p. 625.
*Asiatic Cholera: Clinical Study and Experimental Therapy with Streptomycin. H. A. Reimann, G. C. T. Chang, Liang-Wei Chu, P. Y. Liu and Ying Ou.—p. 631.
*Studies on Atabrine (Quinacrine) Suppression of Malaria: I Consideration of Individual Failures of Suppression. F. B. Bang, N. G. Hairston, J. Maier and W. Trager.—p. 649.
Longevity of Killing Effect of DDT for Mosquitoes Contacting Screen Wire Painted with DDT Solutions. J. E. Elmendorf, P. E. Marucci, J. B. Griffin and others.—p. 663.
Study of Hookworm Infection in Navy and Marine Personnel on Guam. N. R. Stoll, E. H. Loughlin, A. H. Harris and B. M. Chenoweth Jr.—p. 687.
Experiments to Determine Potential Mosquito Vectors of Wuchereria Bancrofti in Continental United States: Part 2. W. L. Newton and I. Pratt.—p. 699.
Tolerance of Fowls for Moderate Infections of Intestinal Helminths. J. E. Ackert and C. L. Wisseman Jr.—p. 721.
Emergency Sterilization of Drinking Water with Heteropolar Catonic Antiseptics: II. Persistence of Germicidal Action Within Intestinal Tract and Removal of Excess Drug with Adsorbing Agents. F. J. Moore and J. Marmorston with technical assistance of F. Golden and N. Anderson.—p. 729.
Causes of Death on Isthmus of Panama, Based on 14,304 Autopsies Performed at Board of Health Laboratory Gorgas Hospital, Ancon, Canal Zone, During Forty Year Period 1904-1944. B. H. Kean.—p. 733.

Murine Typhus in the Rat and in Man.—Rats were collected throughout San Antonio and tested for complement fixing antibodies for typhus. The human cases were investigated to determine the most probable source of infection. Davis and Pollard observed that the fairly good residential areas and the business districts had about 40 per cent of rats positive. The slum district had about 60 per cent of the rats positive. Human cases originated in all districts and showed a general correlation with the percentages of positive rats.

Streptomycin in Asiatic Cholera.—As Reimann and his associates have noted, cholera, when properly treated, is a disease of short duration and of low mortality. The restoration of salts and water and good medical care are the most valuable therapeutic procedures. The behavior of the disease suggests that dehydration and the depletion of salts are of far greater importance than toxemia in the causation of death. Other than a prompt reduction of the numbers of vibrios in the stools and slight shortening of the attacks, there is no evidence that streptomycin given orally or parenterally influences the disease. Strains of Vibrio comma vary greatly in their resistance to streptomycin in vitro.

Quinacrine Suppression of Malaria: Individual Failures.—Bang and his co-workers studied the efficacy of quinacrine suppression of malaria in American and Australian troops in New Guinea and Australia. The concentration of quinacrine present in the plasma of those developing malaria despite supposed suppression is compared with data from adequately suppressed troops. This comparison shows that clinical malaria develops in the presence of inadequate amounts of quinacrine. The development of malaria in a person cannot be taken as proof that he has failed to take quinacrine regularly. Variation of drug level obtained with a standard dose is so great that, granting concentration is related to protection, a small percentage would be unprotected by the standard dosage of 0.7 Gm. of quinacrine per week. Studies of the concentration of quinacrine in the plasma fail to indicate need for a dosage greater than 0.1 Gm. per day.

Annals of Allergy, Minneapolis

4:339-408 (Sept.-Oct.) 1946

Integration and Differentiation of Allergic Phenomena. R. R. Doerr. —p. 339.
Botanic Survey of Southern California. W. S. Small and Grace M. Small.—p. 352.
Chromidrosis Associated with Ragweed Hyposensitization. Helen C. Hayden.—p. 372.
Allergic Causes of Pruritus Ani. F. R. Rugeley.—p. 374.
Quantitative Lepromin Test in Leprosy. M. Salazar Mallen and L. Rosas Prieto.—p. 379.
*Contact Dermatitis from Japanese Rifles. F. Hinman Jr.—p. 384.

Contact Dermatitis from Japanese Rifles.—Hinman observed 7 cases of itching vesicular dermatitis, usually of the hands and forearms, among 150 men who had refinished the stocks of Japanese guns with scrapers and sandpaper. The lesions responded to removal of the allergen and local treatment. Since many of these rifles are in the hands of men returned from overseas, scattered cases will probably be seen throughout the country. Care should be used by individuals with known sensitivity to plant and other allergens, and that of poison oak or ivy in particular, when handling articles coated with Japanese lacquer or varnish.

Annals of Surgery, Philadelphia

124:607-798 (Oct.) 1946

Presidential Address: Treatment of Fractures. W. Darrach.—p. 607.
Pharyngoesophageal Diverticulum: Its Management and Complications. F. H. Lahey.—p. 617.
Diverticula of Lower Thoracic Esophagus: Report of Six, Four of Which Were Operated on. R. M. Janes.—p. 637.
Carcinoma of Midthoracic Esophagus: Its Treatment by Radical Resection and High Intrathoracic Esophagogastric Anastomosis. R. H. Sweet.—p. 653.
*Bronchiogenic Carcinoma. G. E. Lindskog.—p. 667.
Palliative Gastrectomy in Selected Cases of Gastric Ulcer. R. Colp and L. J. Druckerman.—p. 675.
*Subtotal Gastrectomy for Duodenal Ulcer. A. W. Allen and C. E. Welch.—p. 688.
Congenital Hypertrophic Pyloric Stenosis. E. J. Donovan.—p. 708.
*Late Results in Treatment of Ulcerative Colitis. H. W. Cave.—p. 716.
Diverticulitis of Colon. J. J. Morton Jr.—p. 725.
Resection of Abdominal Carcinomas Involving Liver and Spleen Secondarily. A. Brunschwig and D. R. Morton.—p. 746.
Definitive Surgery of Large Intestine Following War Wounds. L. C. Roettig, B. F. Glasser and C. O. Barney.—p. 755.
Early Ambulation in Abdominal Surgery. J. C. Burch and H. C. Fisher. —p. 791.

Bronchiogenic Carcinoma.—Lindskog relates his experience in 100 consecutive cases of primary pulmonary cancers. There were 82 male and 18 female patients. The first symptom was usually cough, pain in the chest or a griplike cold. Sixty-five patients were inoperable when first admitted. Three refused treatment. Surgical exploration was performed on 32. Twenty of the 32 patients were found not suitable for resection. Twelve patients were submitted to surgical resection (10 pneumonectomy, 2 lobectomy), with a hospital mortality of 25 per cent. Three patients are surviving 2.5 to 5.5 years after successful resection. All had squamous cell carcinoma. They are now clinically well. One patient survives and is working 3.5 years after radiation therapy. Radiation therapy increased the average life expectancy from 5.0 months in the untreated group to 8.6 months in the group which was treated by radiation, with or without surgical exploration. This difference of 3.6 months does not have statistical significance.

Subtotal Gastrectomy for Duodenal Ulcer.—Allen and Welch think that from 10 to 15 per cent of cases of duodenal ulcer must be treated surgically. This group includes ulcer patients in varying degrees of chronicity who have developed cicatricial stenosis, those who bleed massively with each exacerbation and those who continue to have pain on the ambulatory medical regimen. The authors thought that the operation should attempt removal of the distal two thirds of the stomach and the ulcer bearing segment of the duodenum. Failures due to technical difficulties with the duodenal stump made it obvious that the risk was too great to pursue this procedure in all cases. Four different modifications which have been more successful are described. A table which classifies the results in 129 cases shows that the results were excellent in 112 cases, satisfactory in 8 and poor in 9 cases.

Late Results in Ulcerative Colitis.—Cave examined 50 of 80 patients who survived operation for ulcerative colitis. Forty were at work. The ileostomy bag has proved not very annoying. Many of the younger patients are able to play golf and baseball, some play tennis and a few even swim in the ocean. There were 3 who showed malignant changes originating in a polypus in some part of the colon. These 3 patients are still alive from three to seven years after colectomy. Another patient developed a carcinoma in the remaining rectal segment, failed to notify her physician of persistent bleeding and returned to the hospital with an inoperable lesion. She died. The fecal stream has been successfully reestablished in 2 patients by ileosigmoidostomy. Prolapse of the ileum through the stoma frequently has been a serious complication. To prevent irritation of the skin about the ileal stoma, compound tincture of benzoin, followed by generous applications of fullers' earth or a dusting powder, is generally effective. Acute ileus due to adhesions or a volvulus is not an infrequent occurrence. Sudden collapse from salt deprivation is treated with large amounts of salt orally and intravenously. There is no standard diet for all patients with ileostomy, but fruit juices and leafy vegetables should be avoided.

Archives of Internal Medicine, Chicago

78:369-496 (Oct.) 1946

*Hemolytic Streptococcic and Nonstreptococcic Diseases of Respiratory Tract: Comparative Clinical Study. L. A. Rantz, P. J. Boisvert and W. W. Spink.—p. 369.
Megakaryocytic Reaction Localized in Bone Marrow: Report of New Hematologic Syndrome with Observations on Origin and Development of Megakaryocytes and Derivation of Platelets. V. De La Fuente. —p. 387.
Objective and Clinical Study of Tongue: Comparison of Normal, Desquamated and Atrophic Tongues by Tongue Print Method. J. R. DiPalma.—p. 405.
Retinal and Choroidal Arterioles in Malignant Hypertension: Clinical and Pathologic Study of 15 Cases. F. R. Manlove.—p. 419.
Cardiac Muscle: Further Studies; Investigation of Chemical Changes in Myocardial Insufficiency, with Special Reference to Adenosinetriphosphate. G. H. Mangun and V. C. Myers.—p. 441.
Infectious Diseases: Twelfth Annual Review of Significant Publications. H. A. Reimann.—p. 447.

Streptococcic and Nonstreptococcic Diseases of the Respiratory Tract.—According to Rantz and his associates hemolytic streptococcic infection of the respiratory tract is usually of acute onset and associated with chills, headache, generalized aching and prostration. The prevailing symptom is sore throat, with tonsillar and pharyngeal exudate and redness and edema of the pharyngeal tissues. Tender anterior cervical glands are nearly always observed. Nonstreptococcic disease of the respiratory tract is typically a disorder associated with cough and hoarseness. Nasopharyngeal tissues are nearly normal. Exudate, edema and redness are minimal or absent. Tender anterior cervical glands are rarely observed. The authors think that a differentiation between streptococcic and nonstreptococcic diseases of the respiratory tract in adults may be made in the northern United States with an accuracy of approximately 70 per cent without bacteriologic study of the throat flora and in from 80 to 90 per cent if this laboratory procedure is included. The situation is probably different in the Southern states, where streptococcic disease occurs infrequently and where the atypical varieties of nonstreptococcic disease would be observed more often and differential diagnosis would be more difficult.

Archives of Neurology and Psychiatry, Chicago

56:365-488 (Oct.) 1946

Electrical Skin Resistance Test in Evaluation of Peripheral Nerve Injuries. E. Herz, G. H. Glaser, J. Moldover and T. I. Hoen. —p. 365.
Primary Behavior Disorders and Psychopathic Personality: I. Correlations of *Electroencephalogram with Family History* and Antecedent Illness or Injury. J. S. Gottlieb, M. C. Ashby and J. R. Knott. —p. 381.
Cleidocranial Dysostosis with Psychosis. S. Kilgore and G. W. Lasker. —p. 401.
Electrical Paresthesias in Extremities Following Injury to Central Nervous System. S. C. Little.—p. 417.
Histologic Study of Brain in Experimentally Induced Acidosis. W. F. Windle, H. Koenig and A. V. Jensen.—p. 428.
*Meningoencephalitis Complicating Herpes Zoster Ophthalmicus After Treatment by Vaccination. M. J. Madonick.—p. 434.
*Surgical Treatment of Syringobulbia and Syringopontia: Report of 2 Cases. F. J. Cramer.—p. 442.

Meningoencephalitis Following Vaccination for Herpes Zoster Ophthalmicus.—Madonick reports the occurrence of meningoencephalitis in a man aged 60 following vaccination for treatment of herpes zoster ophthalmicus. The nervous complications appeared eight days after the patient had been vaccinated. It would seem that the herpes virus was activated into a full blown meningoencephalitis by the vaccinia virus.

Surgical Treatment of Syringobulbia and Syringopontia.—Cramer reports 2 cases in which he operated on the brain stem successfully for the relief of syringobulbia and syringopontia. Syringomyelia, syringobulbia and syringopontia are topographically different expressions of the same basic pathologic process. They are due to anomalous congenital dysplasia of ectopic gliogenous cell rests within the neuraxis, and the symptoms are caused by the sequelae of the developmental maturative and degenerative processes which these undergo. In both cases the condition simulated neoplasm clinically in the progression of symptoms. In both cases the syndrome of advancing intracranial pressure was relieved. The author concludes that syringoid myelodysplasias of the brain stem are amenable to surgical intervention. Operation should be undertaken when the course is relentlessly progressive and there is advancing intracranial compression.

Archives of Otolaryngology, Chicago

44:377-516 (Oct.) 1946

Osteomyelitis of Lower Jaw and Rational Use of Chemotherapeutic Agents. C. D. Blassingame.—p. 377.
*Ménière's Syndrome: The Basic Fault? M. Atkinson.—p. 385.
War Injuries to Mastoid and Facial Nerve. D. Myers.—p. 392.
Abnormal Course of Facial Nerve in Fallopian Canal. K. Kettel.—p. 406.
*Penicillin in Oral Therapy of Vincent's Angina and Acute Follicular Tonsillitis. E. S. Hopp.—p. 409.
Rhinitis and Eustachian Salpingitis. M. D. Campbell.—p. 414.
Neuralgic Syndromes of Head: Anatomy and Physiology of Sensory Nerves to Head. R. Jaeger.—p. 424.
Fractures of Malar-Zygomatic Compound: Treatment by Improved Methods and Myoplasty. M. B. Stewart and J. J. Conley.—p. 443.
Free Voice and Pure Tone Audiometer for Routine Testing of Auditory Acuity: Studies on Comparative Efficiency. J. D. Harris.—p. 452.
Local Use of Penicillin and Sulfathiazole for Acute and Chronic Sinusitis. A. R. Everett.—p. 468.
Effect of Sulfonamide Drugs on Mucous Membranes: Experimental Study of Action of Newer Sulfonamide Drugs on Mucous Membranes of Rabbits. J. C. Dickson.—p. 474.
Functional Examination of Hearing. A. Lewy and S. L. Shapiro. —p. 483.

Ménière's Syndrome.—Atkinson brings together the evidence which supports the view that dysfunction of the capillaries is the basic fault which produces the disturbance of the labyrinthine function. Increased permeability of the capillaries explains the histologic picture. The treatments by reduction of water intake and sodium intake or by increase of potassium intake owe their beneficial effect to diminishing the amount of fluid available to seep through the abnormally permeable capillary walls. Treatment with histamine or nicotinic acid is more fundamental, since it seeks to overcome the factor which is damaging the capillary wall. The one tries to limit the leak from the reservoir by diminishing the head of water; the other attempts to repair the walls. The author thinks that Ménière's disease is not a disease per se but a syndrome. It is the syndrome of the labyrinth in paroxysmal form and can be produced by any factor which, by increasing the permeability of the capillaries forming the stria vascularis, increases the production of endolymph, thus raising intralabyrinthine pressure. Satisfactory treatment depends on determining what that factor is and eliminating it.

Penicillin in Vincent's Angina and Follicular Tonsillitis.—Hopp treated 25 patients who had Vincent's angina with penicillin sodium in gelatin capsules, 10,000 units each, one being given every two hours for ten doses. Cure was obtained in twenty-four hours. Thirty-seven patients were treated similarly for acute follicular tonsillitis, with the body temperature falling to normal in twenty-four hours and great symptomatic relief; cure was obtained in three to five days. The author considers this a preliminary report and says that further study is required to determine (*a*) the least number of doses of penicillin necessary for cure and (*b*) the smallest dose that will yield results as good as those obtained with the doses mentioned.

Archives of Pathology, Chicago

42:359-458 (Oct.) 1946

*Necropsies on Okinawans: Anatomic and Pathologic Observations. P. E. Steiner.—p. 359.
Bilateral Ovarian Aplasia. C. A. Erskine and I. Rannie.—p. 381.
Eclampsia: Report of Case in Which There Was Extensive Destruction of Brain. H. Josephy and E. F. Hirsch.—p. 391.
Temporal Arteritis: Report of Case and Comparison with Respect to Periarteritis Nodosa. L. Z. Gordon and D. C. Thurber..—p. 402.
Lesions of Reticuloendothelial Cells in Anaphylactic Shock. P. Bueno. —p. 412.
Carotid-Cavernous Fistula. O. Eitzen.—p. 419.
Truncus Arteriosus Communis Persistens. A. C. Webb.—p. 427.
*Atherosclerosis and Arteriosclerosis in Dogs Following Ingestion of Cholesterol and Thiouracil. A. Steiner and F. E. Kendall.—p. 433.
Further Evidence for Successive Stages in Formation of Neoplasms. *H. P. Rusch and B. E. Kline.—p. 445.*

Necropsies on Okinawans.—The necropsies reported by Steiner were done on 150 Okinawans. There were 51 males and 99 females, and the ages of the subjects varied between 18 days and 95 years. Death was due to combat injuries in 100 cases, to noncombat (chiefly medical) causes in 36 and to a combination of war injuries and medical conditions in 14. Apart from the combat injuries these necropsies reveal differences from what would be expected in a similar series in the United States. The most striking finding was the low incidence of retrogressive and degenerative changes. Senility came late, and cardiac and skeletal muscles remained well preserved even in the aged. Arteriosclerosis also developed late or not at all, and its lethal sequels in the brain, the kidneys and the heart were never seen. Hypertensive cardiovascular-renal disease was not seen except in 1 case of the type associated with toxemia of pregnancy. Although cirrhosis of the liver was common, disease of the biliary tracts, including cholelithiasis, was not. The low incidence of malignant neoplasms also was of interest. There was a suggestion of excellent endocrine balance in the absence or the low incidence of hirsutism in women, pathologic obesity, thyroid disease, diabetes, cystic diseases of the mammary gland, fibroids and endometrial disease of the uterus, and nodular hyperplasia of the prostate and the adrenal glands. There was no disease of the stomach except ulcers; these were acute and may have been related to the *psychosomatic stress incidental to the bombing and invasion.* There were no scars of healed peptic ulcers. The most important medical problems apart from the combat injuries were the infectious diseases. Tuberculosis, dysentery, pneumonia and tetanus took heavy tolls. Filariasis appeared to be common but was of a benign form. The incidence of intestinal helminthic infections was high, but here again the clinical effects were negligible.

Atherosclerosis in Dogs.—Arterial lesions similar in distribution and morphologic character to those seen in human atherosclerosis and arteriosclerosis were found in dogs following prolonged hypercholesteremia. The high serum cholesterol levels were produced by feeding 10 Gm. of cholesterol in 40 cc. of cottonseed oil daily to dogs whose thyroid function was modified by administration of thiouracil. Although arteriosclerosis of man is too protean a disease to have a single cause, Steiner and

Kendall think that the results reported here justify the belief that at least in the cases in which arteriosclerosis follows hypercholesteremia the disease is similar to that produced experimentally in animals.

Archives of Surgery, Chicago

53:359-488 (Oct.) 1946

Tests for Collateral Circulation in Extremities. H. B. Shumacker Jr. and K. L. Carter.—p. 359.

*Effect of Penicillin in Experimental Intestinal Obstruction: Cure of Strangulated Ileal Obstructions Treated with Penicillin Prior to Late Resection. A. Blain, J. D. Kennedy, R. J. Calihan and H. N. Harkins.—p. 378.

Air Force Battle Casualties: Experience with Acute Injuries of 839 Battle Casualties from Eighth Air Force. C. E. Gardner.—p. 387.

Orbicularis Oris Muscle in Double Harelip. F. C. Lee.—p. 407.

Fatalities Following War Wounds of Abdomen. B. Bradford Jr. and D. A. Campbell.—p. 414.

Production of Experimental Portal Hypertension in Dog: Anatomy of Hepatic Veins in Dog. D. Kershner, T. C. Hooton and E. M. Shearer.—p. 425.

Carcinoma of Pancreas Still Local at Autopsy Four Years After Palliative Operation. H. C. Saltzstein and J. Rao.—p. 435.

Para-Articular Ossification of Soft Parts of Ankle: Complication of Sprain With or Without Fracture of Shaft of Ipsilateral Fibula. C. J. Sutro.—p. 441.

Injuries of Thoracic Duct: Report of Case of Chylothorax in Which Patient Recovered After Ligation of Thoracic Duct. R. H. Loe. —p. 448.

Arteriosclerosis Obliterans of Abdominal Aorta. W. D. Holden.—p. 456.

*Acute Fulminating Ulcerative Colitis with Massive Perforation and Peritonitis: Report of Case. T. C. Chisholm.—p. 462.

Primary Peritonitis Caused by Friedländer's Bacillus: Report of Case with Recovery Following Sulfadiazine Therapy. R. K. McDonald and G. H. Klingon.—p. 477.

Blood Level of Phenol in Uremia. R. M. Nesbit, L. B. Burck and N. S. Olsen.—p. 483.

Penicillin in Intestinal Obstruction.—Blain and his associates present an account of 5 dogs in which resection of a strangulated ileac obstruction was performed at a period twice as long after the production of the strangulation as any control dog not treated with penicillin lived. Four of these resections were completely successful, and the dogs were cured. Blain recommends therapy with massive doses of penicillin in all cases of acute intestinal obstruction in which strangulation is believed to be present or in which strangulation cannot be ruled out. This should be an adjunct to and not a substitute for early operation on such obstructions.

Acute Fulminating Ulcerative Colitis with Peritonitis.—A woman aged 43, hospitalized in profound shock, had had diarrhea for four weeks. Daily treatments included repeated attempts to pass a Miller-Abbott tube to relieve distention and the administration of plasma, blood and solutions containing salt and sugar. Sodium sulfadiazine was given parenterally. Improvement continued for three days, with a slight drop in the pulse rate, stabilization of the blood pressure, clearing of the mental state and decrease in discomfort. On the fourth hospital day the patient began to pass large amounts of bright red blood by rectum. She developed profound peripheral collapse, which was not remedied by repeated transfusions; she died on the fifth day. Necropsy revealed acute ulcerative colitis with extensive necrosis resulting in the disappearance of the ventral (antimesenteric) half of the entire colon from the ileocecal valve to the sigmoid. The remaining wall of the large bowel appeared as an open trough with severe cellulitis and erosion into the submucosa and muscularis. Anal excoriations and a rectovaginal fistula were noted. A table summarizes the salient features of 5 acute cases together with those of the present one. Chisholm emphasizes that this condition probably differs etiologically from the "fulminating" form of thromboulcerative colitis described by Bargen. He regards well timed surgical intervention in conjunction with general supportive therapy as the best treatment.

Bulletin of Johns Hopkins Hospital, Baltimore

79:207-260 (Sept.) 1946

Necrosis and Ulceration of Intestinal Wall in Simple Intestinal Obstruction: Experimental Study. W. H. Harper and R. A. Lemmer.—p. 207.

Renal Clearance of Thiosulfate in Man. E. V. Newman, A. Gilman and F. S. Philips.—p. 229.

Differences in Action of Crystalline and Noncrystalline Preparations of Esteriol. J. Schiller.—p. 243.

California Medicine, San Francisco

65:93-148 (Sept.) 1946

Anesthesia for Emergency Surgical Procedures. C. F. McCuskey.—p. 93.

Treatment of Bladder Tumors. R. W. Barnes, C. L. Turner and R. T. Bergman.—p. 95.

Onset of Ovulation During the Puerperium. R. A. Lyon and Mary Jane Stamm.—p. 99.

Use of Penicillin in Nongonococcal Infections of Urogenital Tract. H. M. Weyrauch.—p. 104.

Trend of Medicine and Its Relationship to Prevention of Disease. S. P. Lucia.—p. 108.

Clotting Mechanism and Tests for Its Efficiency. R. W. Hammack. —p. 109.

Delayed Reactions Following Penicillin Therapy. A. T. Hinman, G. V. Warner and J. G. Li.—p. 112.

65:149-200 (Oct.) 1946

Human Reactions to Experimentally Induced Impact Forces. H. R. Bierman.—p. 149.

Dermatologic Aspects of Dermatitis Due to Atabrine. R. O. Pfaff. —p. 153.

*Atabrine Dermatitis and Associated Aplastic Anemia. J. R. Drake and H. D. Moon.—p. 154.

Untoward Effects of Atabrine. A. G. Bower.—p. 157.

Observations on Function of Clavicle. V. T. Inman and J. B. DeC. M. Saunders.—p. 158.

Two Team Abdominoperineal Resection. M. R. Hill and R. L. Belt. —p. 167.

Responsibility of Pediatrician in Orthodontic Problem. F. M. Pottenger Jr.—p. 169.

Medical Progress: Present Concepts of Clinical Significance of Unipolar Precordial Electrocardiograms. M. Sokolow.—p. 171.

Quinacrine Dermatitis and Aplastic Anemia.—Commenting on the large number of soldiers who developed skin eruptions during treatment with quinacrine, Drake and Moon show that the cutaneous reactions to quinacrine may be divided into three groups: (1) the lichenoid, which is the type primarily to be considered in this report, (2) the eczematoid and (3) the generalized exudative and exfoliative type. Treatment should consist in cessation of administration of quinacrine, general supportive care and dermatologic care along accepted lines. X-ray therapy was of no benefit, and heavy metals and arsenic cannot be recommended. Aplastic anemia was the most common cause of the death of patients with skin lesions due to quinacrine. Aplastic anemia was present in 9 cases of quinacrine dermatitis coming to necropsy.

Canadian Medical Association Journal, Montreal

55:425-542 (Nov.) 1946

Ascorbic Acid Metabolism After Trauma in Man. W. A. Andreae and J. S. L. Browne.—p. 425.

*Bilateral Frontal Lobe Leukotomy in Treatment of Mental Disease. K. G. McKenzie and L. D. Proctor.—p. 433.

Cancer of Prostate: Eleven Year Survey at Toronto General Hospital. R. Pearse and E. G. Meyer.—p. 441.

Absorption of Enteric Coated Ammonium Chloride. Frances L. Selye. —p. 445.

Observations on Sprue Syndrome. S. J. Shane and V. F. Deyke.—p. 448.

Intra-Abdominal Pressures. R. Lecours.—p. 450.

Further Studies on Ultraviolet Radiation in Surgery. R. Fraser. —p. 457.

Prognosis in Cancer. N. A. McCormick.—p. 460.

Role of Emotions in Production of Gastrointestinal Disturbances. J. P. S. Cathcart.—p. 465.

Effect of Benzedrine on Mental or Physical Fatigue in Soldiers. W. Somerville.—p. 470.

Clinical Observations on Use of Benadryl, a New Antihistamine Compound. H. F. MacInnis.—p. 476.

Vein Ligation in Prevention of Pulmonary Embolus. G. C. Hohnston and H. R. Robertson.—p. 479.

Management of Emergencies in Diabetes Mellitus. W. W. Simpson. —p. 484.

Surgeon-Anesthetist Relationship. P. H. T. Thorlakson.—p. 489.

Immunization in Children. J. H. B. Grant.—p. 493.

Bilateral Frontal Lobe Leukotomy in Mental Disease.—McKenzie and Proctor, after briefly reviewing the history and physiologic basis for frontal lobe leukotomy, discuss the operative technic and the selection of patients. They performed the operation on 27 patients in whom all other recognized psychiatric therapies were employed to no avail. A common clinical finding was that of fear, agitation or impulsive behavior. Approximately 85 per cent of the cases have shown improvement ranging from improved nursing problems to complete recoveries. Thirteen of 27 patients who were previously considered to be hopelessly mentally ill have been returned to community life. The only complication observed is that of a mild hypersexuality in 25 per cent of the cases.

Cincinnati Journal of Medicine

27:675-774 (Oct.) 1946

Clinical Uses of Products of Human Plasma Fractionation. C. A. Janeway.—p. 675.
Respiratory Tract Cancer Deaths in Relation to Atmospheric Pollution in Cincinnati. C. A. Mills.—p. 692.
Blood Levels and Urinary Excretion of Penicillin After Oral Administration. F. W. Oberst, M. J. Foter and F. A. Nielsen.—p. 696.
Folic Acid: Lactobacillus Casei Factor, Liver Vitamin Bc. C. F. Vilter.—p. 706.

27:775-856 (Nov.) 1946

Nature and Treatment of Peptic Ulcer. W. L. Palmer.—p. 775.
*Allergy Associated with Asthma, Dermatitis, Cataract and Optic Atrophy Treated with Urinary Proteose: Report of Case. E. E. Rhoads.—p. 792.
Surgical Treatment of Gallbladder Disease. M. M. Zinninger.—p. 799.

Urinary Proteose in Treatment of Allergy.—Rhoads reviews the history of a woman aged 24 in whom asthma and severe dermatitis were associated with cataract and optic atrophy. Treatment which consisted in the administration of autogenous urinary proteose resulted in an apparent cure of the dermatitis and prevention of further ocular change. Diminution of the amount of proteose precipitated was proportional to the response of the patient.

Connecticut State Medical Journal, Hartford

10:817-892 (Oct.) 1946

Health Needs of People. J. H. Howard.—p. 817.
Connecticut's Rank Among States with Respect to Various Health Factors. J. H. Watkins.—p. 823.
Probable Echinococcus Disease of Heart: Review of Literature, with Case Report. C. C. Verstandig.—p. 830.
Health Legislation Beneficial to People. P. K. Gilman.—p. 833.
On Community Cooperation for Health. G. M. Wheatley.—p. 837.
Malpractice Actions: Who Starts Them? L. J. Regan.—p. 842.

10:893-970 (Nov.) 1946

*Cardiovascular Catheterization as Aid in Diagnosis of Abnormal Cardiovascular Communications. A. J. Geiger, H. C. Anderson, A. W. Winkler and H. S. Kaplan.—p. 895.
Psychiatric Reactions to Aerial Combat and Their Sequelae. W. A. Console.—p. 900.
Present Status of Electric Shock Therapy. S. Drobnes.—p. 903.
Psychogenic Deafness. E. H. Truex Jr.—p. 907.
Problems of Prepayment for Medical Service. D. A. Clark.—p. 915.
Problems Related to Medical Care of Veterans. J. C. Harding.—p. 921.

Cardiovascular Catheterization.—Geiger and his associates discuss the technic of cardiovascular catheterization and its value in the study of cardiovascular abnormalities as illustrated by a few cases. The procedure appears to be entirely innocuous.

Endocrinology, Springfield, Ill.

39:161-224 (Sept.) 1946

Application of Principles of Statistical Analysis to Biologic Assay of Hormones. L. I. Pugsley.—p. 161.
Estrogen in Late Pregnancy Mare Serum and Ovarian Inhibition. H. H. Cole.—p. 177.
Nature of Circulating Estrogen: Lipoprotein-Bound Estrogen in Human Plasma. S. Roberts and Clara M. Szego.—p. 183.
Fluctuations in Weight, Hematocrit and Plasma Protein with Menstrual Cycle. D. N. Danforth, P. K. Boyer and S. Graff.—p. 188.
Effect of Steroids Related to Cortical Hormones and of Stilbestrol on Adrenalectomized Guinea Pig. S. Bruzzone, H. Borel and J. Schwarz.—p. 194.
Adrenal Function in Pregnancy. Eleanor H. Venning.—p. 203.

Experimental Medicine and Surgery, Brooklyn

4:193-288 (Aug.) 1946

Chest Lead Diagram of Normal Heart: Preliminary Report. B. Kisch and B. Richman.—p. 193.
Ethylenediamine Dihydrochloride or "Chlor-Ethamine": I. As Urinary Acidifier. E. M. Boyd and J. A. S. Dorrance.—p. 212.
Id.: II. Untoward and Toxic Reactions. E. M. Boyd and Kathleen G. W. Seymour.—p. 223.
Id.: III. As Diuretic. E. M. Boyd and M. Shirley Lapp.—p. 228.
Cannon Sound and Other Intensified Single Heart Sounds. F. M. Groedel and M. Miller.—p. 231.
Intratracheal Pneumocardiogram in Man: Observations on Patients with Tracheal Cannulae. F. M. Groedel and M. Miller.—p. 248.
Carbohydrate Content of Serum Proteins in Normal and Toxemic Pregnancy. B. Lustig and J. Novak.—p. 255.
Coagulation Defect in Shocks Produced by Trypsin, Peptone and Ascaris Extracts. M. Rocha e Silva, Sylvia O. Andrade and Rachel M. Teixeira.—p. 260.
Influence of Wheat Germ Oil on Production of Tumors in Rats by Methylcholanthrene. W. G. Jaffe.—p. 278.

Hawaii Medical Journal, Honolulu

6:3-66 (Sept.-Oct.) 1946

General Principles of Pharmacology. C. D. Leake.—p. 13.
*Aversion Treatment of Alcoholism. W. M. Shanahan and E. J. Hornick.—p. 19.
Analysis of Queen's Hospital Diabetic Clinic: Physician's Data. M. E. Berk, Lillian Elsholtz Page and Virginia C. Ott Herbst.—p. 22.
Erythroblastosis Fetalis and Icterus Precox: Four Case Reports. F. D. Nance.—p. 26.

Aversion Treatment of Alcoholism.—The conditioned reflex treatment depends on an aversion or distaste for alcoholic beverages by virtue of their association during treatment with drugs—emetine, pilocarpine and ephedrine—which make the patient sick. The repeated association of the two stimuli alcohol and drugs under appropriate circumstances will result finally in the ability of the conditioned stimulus (liquor) to produce the symptom complex formerly brought about by the unconditional stimulus (drugs). The conditioned reflex treatment of selected patients produces results in from 40 to 80 per cent of them. Shanahan and Hornick report that of 24 patients thus treated 70 per cent are abstinent, 17 per cent are improved and 13 per cent are unimproved. The conditioned reflex treatment is not a general panacea for alcoholism, since the great majority of those afflicted fail to recognize the true nature of their disorder and decline definite therapy.

Indiana State Medical Assn. Journal, Indianapolis

39:477-584 (Oct.) 1946

Chronic Brucellosis as Public Health Problem. T. B. Rice.—p. 477.
*Chronic Brucellosis: Preliminary Report. M. J. Moss.—p. 481.
Symptomatology and Diagnosis of Chronic Brucellosis. N. Davis.—p. 485.
Practice of Medicine in Rural Areas. J. E. Ferrell.—p. 488.
General Practitioner in Public Health Program. L. E. Burney.—p. 490.
Treatment of Peptic Ulcer in the Diabetic. O. E. Wilson.—p. 494.
Office Practice of General Practitioner. A. P. Hauss.—p. 495.
Family Physician—Reminiscence. J. B. Maple.—p. 499.

Chronic Brucellosis.—According to Moss the most constant manifestations of chronic brucellosis are chronic fatigue and exhaustion, arthralgia and myalgia, occasional vague gastrointestinal symptoms, mental depression and apprehension, with or without chronic pyrexia, and a complete lack of physical findings. An epidemiologic history of contact is necessary. The acute phase of the disease may never have existed, and serum agglutination titers are more frequently negative than positive. Blood cultures may well be expected to be negative in the chronic phase of the disease. Opsonic-phagocytic indexes are ordinarily unobtainable. The skin test is the most reliable and the most convenient test for the general practitioner. The author uses the skin test for brucellosis in all cases presenting a history of chronic fatigue and exhaustion, arthralgia and myalgia, associated with an absence of physical findings, with or without chronic pyrexia. More than four hundred skin tests have been given. About 19 per cent have been positive, but treatment is instituted only if the symptomatology warrants it. Vaccine therapy has given good to excellent results in 90 per cent of 74 patients with chronic brucellosis.

Iowa State Medical Society Journal, Des Moines

36:419-472 (Oct.) 1946

Problem of Certain Animal Diseases Prevalent in Iowa as Related to Human Medicine. R. E. Shope.—p. 419.
Congenital Cystic Malformation of Lung: Differential Diagnosis and Pathologic Characteristics in 21 Cases. W. E. Adams, F. J. Phillips and J. W. Hanni.—p. 425.
Reflections on Medical Education. D. Slaughter.—p. 434.
*Review of Studies on Immunity to Vivax Malaria. M. F. Boyd.—p. 437.
The Doctor Treats the Patient. Lauren H. Smith.—p. 446.

Immunity to Vivax Malaria.—According to Boyd the outcome of the inoculation of an institutionalized neurosyphilitic patient usually cannot be predicted. This uncertainty is due to the circumstance that the mental deterioration of the patients rarely permits them to give an accurate history of prior experience with this disease. Their response to inoculation with Plasmodium vivax permits of their classification in four categories: (1) inoculation resulting in a take, (*a*) an attack of three weeks or longer, (*b*) a short attack lasting from one day to two weeks, (*c*) without a clinical attack and (2) inoculation not resulting in a take. An interpretation of the significance of these results is permitted from the homologous or heterologous reinoculation of patients. Since infections of the character of 1 *a* have never been observed subsequent to reinoculation, it is inferred that patients with attacks of three weeks or more in duration were previously completely susceptible. Results like 1 *b* may follow either heterologous or homologous reinoculations and in the latter case indicate that immunity is incomplete. Following homologous reinoculation, results like 1 *c* or 2 may be secured. The latter indicates a very effective immunity or refractory condition. It is readily made evident by reinoculation with demonstrably infectious material that convalescents from vivax malaria have a distinct and at times potent immunity to the homologous parasites.

36:473-508 (Nov.) 1946

War Wounds of Abdomen. H. H. Searls and F. P. Shidler.—p. 473.
*Gelsemium in Preparalytic Stage of Poliomyelitis. H. D. Holman. —p. 477.
Streptococcic Pneumonia. J. E. McFarland.—p. 481.
Primary Atypical Pneumonia. B. F. Wolverton.—p. 485.
Roentgenologic Aspects of Primary Atypical Pneumonia. W. K. Cooper. —p. 487.

Gelsemium in Preparalytic Poliomyelitis.—Holman used gelsemium (yellow jasmine root) for its antispasmodic action in the treatment of 60 patients with acute anterior poliomyelitis. Since less than 7 per cent of those treated had clinical paralysis, it is concluded that the drug is effective if diagnosis can be made early and treatment begun before there is permanent damage to the nervous system. The margin between its therapeutic and toxic concentration is reported to be narrow.

Journal of Bacteriology, Baltimore

52:405-504 (Oct.) 1946. Partial Index

Mounting of Bacteria for Electron Microscope Examination. J. Hillier and R. F. Baker.—p. 411.
Small Colony Variants of Escherichia Coli. Charlotte A. Colwell.—p. 417.
Growth of Brucella in Aerated Liquid Cultures. H. N. Glassman and S. Elberg.—p. 423.
Further Studies on One Anaerogenic Paracolon Organism, Type 29911. C. A. Stuart, K. M. Wheeler and Virginia McGann.—p. 431.
Isolation from Agar of Inhibitor for Neisseria Gonorrheae. H. L. Ley Jr. and J. H. Mueller.—p. 453.
*Urea Decomposition as Means of Differentiating Proteus and Paracolon Cultures from Each Other and from Salmonella and Shigella Types. W. B. Christensen.—p. 461.
Influence of Thiamine on Susceptibility of Chicks to Avian Encephalomyelitis. J. M. Cooperman, H. C. Lichstein, P. F. Clark and C. A. Elvehjem.—p. 467.
Role of Spontaneous Variants in Acquisition of Streptomycin Resistance by Shigellae. M. Klein and L. J. Kimmelman.—p. 471.
Studies on Relationship Between Bacteriophage and Bacterial Host Cell: I. Adsorption of Phage by Resistant Variants of Staphylococcus. J. E. Henry and R. J. Henry.—p. 481.
Filters Suitable for Separating Soil Bacteria from Bacteriophage. H. J. Conn and Isabel Dimmick.—p. 489.

Differentiation of Proteus and Paracolon Cultures.—Christensen describes a urea medium which eliminates the necessity of an organism's utilizing urea ammonia as a sole source of nitrogen and which is therefore capable of demonstrating urease activity in organisms somewhat more fastidious in their nitrogen requirements. The medium shows that, in addition to Proteus, paracolon Aerobacter and paracolon intermediates are definitely urease positive. Paracolon Escherichia as well as Salmonella and Shigella species are urease negative. The medium is recommended as an aid in routine enteric bacteriology.

Journal of Clinical Endocrinology, Springfield, Ill.

6:595-654 (Sept.) 1946

Animal Experiments Relating to Water Diuresis Tests for Adrenal Insufficiency. R. Gaunt.—p. 595.
*Specificity of "Water Test" as Diagnostic Procedure in Addison's Disease. M. S. Levy, M. H. Power and E. J. Kepler.—p. 607.
Changes in Prominence of Eyes in Various Thyroid States. B. M. Dobyns and S. F. Haines.—p. 633.
Nature of Benadryl Activity: Glucose Tolerance Curves. H. Reinstein and T. H. McGavack.—p. 643.

Water Test in Diagnosis of Addison's Disease.—Levy and his associates report the results of the water test at the Mayo Clinic between 1941 and 1945. The first procedure is based on the inability of patients with adrenal cortical insufficiency to excrete orally ingested water at the normal rate. The second procedure employs a formula which takes into account the volume of excreted urine and the clearances of urea and chloride from the blood. The delayed excretion of water, such as usually occurs in Addison's disease, will not by itself establish the diagnosis of the disease. False positive responses to the first procedure may occur in many seemingly unrelated clinical conditions. Such false positive responses usually indicate the presence of organic illness not necessarily Addison's disease. Normal diuresis following ingestion of water (false negative result of test) occurs relatively infrequently in cases of Addison's disease, having been found 9 times in 74 cases. When such a false negative result is encountered it is difficult to establish Addison's disease by any other diagnostic procedure. In the presence of adequate clinical evidence and failure of normal diuresis, the diagnosis of Addison's disease can usually, but not invariably, be established by the second procedure. This one occasionally gives false positive results, but these occur with much less frequency than does delayed diuresis. False negative results occur even more rarely, and when they do it is again difficult to establish the diagnosis of Addison's disease by other laboratory criteria. Administration of sodium chloride, desoxycorticosterone acetate or adrenal cortex extract in amounts commonly employed in the treatment of Addison's disease did not seem in a limited number of cases to rectify the abnormal factors that account for the production of abnormal water tests. Patients having Addison's disease apparently lack the capacity to excrete at normal rates both orally ingested water and water given intravenously as 5 per cent solution of dextrose. From this it is concluded that, even if ingested water should be absorbed at a normal rate, its rate of excretion would be delayed.

Journal of Clinical Investigation, Boston

25:451-664 (July) 1946. Partial Index

*Clinical Uses of 2,3-Dimercaptopropanol (BAL): I. Systemic Treatment of Experimental Arsenic Poisoning (Mapharsen, Lewisite, Phenyl Arsenoxide) with BAL. H. Eagle, H. J. Magnuson and R. Fleischman.—p. 451.
Id.: II. Effect of BAL on Excretion of Arsenic in Normal Subjects and After Minimal Exposure to Arsenical Smoke. J. Wexler, H. Eagle, H. J. Tatum and others.—p. 467.
Id.: III. Studies on Toxicity of BAL on Percutaneous and Parenteral Administration. M. B. Sulzberger, R. L. Baer and A. Kanof.—p. 474.
Id.: IV. Pharmacologic Observations on BAL by Intramuscular Injection in Man. W. Modell, H. Gold and M. Cattell.—p. 480.
Id.: V. Skin Sensitization to BAL. M. B. Sulzberger, R. L. Baer and A. Kanof.—p. 488.
Id.: VI. Treatment of Complications of Arsenotherapy with BAL (British Anti-Lewisite). A. B. Carleton, R. A. Peters, L. A. Stocken and others.—p. 497.
Id.: IX. Treatment of Lewisite Burns of Eye with BAL. W. F. Hughes Jr.—p. 541.
Id.: X. Treatment of Acute Systemic Mercury Poisoning in Experimental Animals with BAL, Thiosorbitol and BAL Glucoside. A. Gilman, Roberta P. Allen, F. S. Philips and Ellen St. John.—p. 549.
*Id.: XI. Treatment of Acute Mercury Poisoning by BAL. W. T. Longcope and J. A. Leutscher Jr. with assistance of E. Calkins and others.—p. 557.
Kidney Function and Circulatory Collapse: Postsyncopal Oliguria. C. Brun, E. O. E. Knudsen and F. Raaschou.—p. 568.
Fate of Intravenously Injected Gelatin in Human Subjects. W. S. Hoffman and D. D. Kozoll.—p. 575.
*Changes in Blood Coagulation Following Coronary Thrombosis Measured by Heparin Retarded Clotting Test (Waugh and Ruddick Test). J. H. Ogura, N. R. Fetter, M. A. Blankenhorn and Helen I. Glueck. —p. 586.
Use of Two Radioactive Isotopes of Iron in Tracer Studies of Erythrocytes. W. C. Peacock, R. D. Evans, J. W. Irvine Jr. and others. —p. 605.

Clinical Uses of 2,3-Dimercaptopropanol (BAL).—Eagle and his associates say that, in the search for compounds capable of acting as decontaminants or antidotes for toxic arsenicals, it was reasoned that simple dithiol compounds might form relatively stable ring compounds with lewisite or other trivalent arsenicals and might consequently compete effectively with the dithiol proteins in the tissues. A large series of dithiol compounds was prepared and tested and 1 in particular, the 2,3-dimercaptopropanol, recommended itself as a local decontaminant in combating the arsenical blister gases. This compound is generally known as "BAL" (British antilewisite).

BAL in Acute Mercury Poisoning.—Longcope and his co-workers present observations made on 23 patients who were admitted to the Johns Hopkins Hospital with a history of having swallowed from 0.5 to 20 Gm. of mercury bichloride and who were treated with BAL. All except 1, who was treated initially with small amounts of BAL, recovered.

Changes in Blood Coagulation Following Coronary Thrombosis.—Ogura and his associates studied 27 cases of acute coronary thrombosis to find evidence of accelerated blood coagulation. In more than three fourths of the cases an acceleration as measured by the Waugh-Ruddick test occurred usually by the second or third day, lasting to about the seventeenth day. Of 16 controls, 9 being in various stages of heart failure, none showed acceleration to the degree seen in coronary thrombosis. Such complications as new coronary thrombosis or extension of the original thrombus or pulmonary infarction developed in 5 patients when acceleration was present, suggesting that this factor may be contributory. The findings suggest also that the first attack is not initiated by accelerated coagulability of the blood and that after the fourth week the clotting mechanism is indistinguishable from normal.

Journal of Experimental Medicine, New York

84:277-402 (Oct.) 1946

Influence of Anesthesia on Experimental Neurotropic Virus Infections: I. In Vivo Studies with Viruses of Western and Eastern Equine Encephalomyelitis, St. Louis Encephalitis, Poliomyelitis (Lansing) and Rabies. S E Sulkin, Christine Zarafonetis and A. Goth —p 277.

Experimental Vibrio Infections of Developing Chick Embryos A. T. Wilson —p. 293.

Nutrition of Host and Natural Resistance to Infection: II. Dietary Effect as Conditioned by Heterogeneity of Test Pathogen Population. H. A Schneider.—p 305.

Immunity in Mumps IV. Correlation of Presence of Complement Fixing Antibody and Resistance to Mumps in Human Beings. Elizabeth P. Maris, J. F. Enders, J. Stokes Jr. and L. W. Kane —p. 323.

Id.: V. Correlation of Presence of Dermal Hypersensitivity and Resistance to Mumps J. F. Enders, L. W. Kane, Elizabeth P. Maris and J. Stokes Jr.—p 341.

Studies on Mechanism of Recovery in Pneumococcal Pneumonia: II. Effect of Sulfonamide Therapy on Pulmonary Lesion of Experimental Pneumonia W. B. Wood Jr. and E N Irons —p. 365.

Id.: III. Factors Influencing Phagocytosis of Pneumococci in Lung During Sulfonamide Therapy. W. B. Wood Jr., Charlotte McLeod and E. N. Irons —p 377.

Id : IV. Mechanism of Phagocytosis in Absence of Antibody. W. B. Wood Jr., Mary R. Smith and Barbara Watson.—p. 387.

Journal of Immunology, Baltimore

54:107-212 (Oct.) 1946

Intradermal Spread of Vital Dye in Anaphylaxis and Bacterial Allergy. K Birkhaug and J. Boe —p 107.

Action of Urea and Some of Its Derivatives on Bacteria: I Bacteriostatic and Bactericidal Effects of Urea and Urethane. L. Weinstein and Alice McDonald —p 117.

Id . II. Antibacterial Activity of Combinations of Urea and Urethane with Sulfonamide and Effect of Carbamates on Para Aminobenzoic Acid and on Solubility of Sulfonamides. L. Weinstein and Alice McDonald —p. 131.

Id : III Effect of Combining Urea or Urethane with Penicillin on Mixed Cultures of Gram Positive and Gram Negative Bacteria. L Weinstein —p 145.

Studies on Antireticular Cytotoxic Serum. I. Introduction and Review of Literature R. Straus —p 151.

Id : II Preparation and Titration of Serum and Study of Its Serologic Properties R. Straus, Mildred Runjavac, R. Zaitlin and others. —p 155.

Id : III Effect of Antireticular Cytotoxic Serum on Healing of Experimentally Produced Fractures in Rabbits. R. Straus, M. Horwitz, D H Levinthal and others —p. 163.

Passive Protection of Central Nervous System of Mice Against Viruses That Pursue Pathway of Olfactory Nerves After Intranasal Instillation Vesicular Stomatitis and St. Louis Encephalitis. H. B. Slavin, H. W. Hale Jr. and G. P. Berry.—p 179.

*Missed Cases and Contact Carriers Among Nasal Carriers of Beta Hemolytic Streptococci. H. M. Lemon and M Hamburger Jr —p. 189.

Quantitative Studies on Neutralization of Pathogenic Agents in Tissues by Circulating Antibodies: VII. Quantitative Determination of Effect of Substances Modifying Capillary Permeability with Aid of Indirect Test U. Friedeman, F. B. Traub and D. Langstadt —p. 197.

Production of Types A, B, C, D, E and F Hemophilus Influenzae Antibody for Diagnostic and Therapeutic Purposes Hattie E Alexander, Grace Leidy and Catherine MacPherson —p. 207.

Nasal Carriers of Beta Hemolytic Streptococci.—One hundred and nine ambulatory nasal carriers of group A hemolytic streptococci in two army camps have been studied from the standpoint of the antistreptolysin response of the blood serum and in most instances of signs and symptoms of respiratory infection. Contact carriers and probable contact carriers among this group were uncommon, comprising less than 5 per cent of the total. Missed cases, probable missed cases and "possible missed cases" accounted for 67.6 per cent of carriers in one camp and 94 3 per cent in the other. In one camp 24 3 per cent were not classifiable by the criteria laid down, though it seems likely that most of these were probably missed cases also.

Journal Industrial Hygiene & Toxicology, Baltimore

28:167-242 (Sept.) 1946

Volatile Hydrides of Toxicologic Importance. S. H. Webster.—p. 167.

Respiratory Air Flow Characteristics and Their Relation to Certain Lung Conditions Occurring in Industry. L. Silverman —p. 183.

Delayed Chemical Pneumonitis Occurring in Workers Exposed to Beryllium Compounds. Harriet L. Hardy and I. R. Tabershaw.—p. 197.

Radium Dial Painting—Medical Status of Workers. I. R. Tabershaw. —p. 212.

Determination of Free Silica in Industrial Dust. T. M. Durkin. —p 217.

Tellurium: I. Toxicity of Ingested Elementary Tellurium for Rats and Rat Tissues R. H DeMeio —p 229.

Lobar Pneumonia in Shipbuilding Industry: Review of 544 Cases over One Year Period. C. M. Grossman —p 233.

Determination of Chlorinated Hydrocarbon Vapors in Air. R. W. Schayer and H. H. Ackerman —p 237.

Journal of Infectious Diseases, Chicago

79:101-198 (Sept -Oct.) 1946

Comparative Effect of Penicillin and Sulfonamide Drugs on Immune Response of Rabbits to Pneumococcus Infection and Relation of Immunity to Bacterial Chemotherapy. P. E Harrison —p 101.

Growth of Psittacosis Virus in Roller Tube Tissue Culture: Use in Vaccine H R Morgan and R. W. Wiseman —p. 131.

*Possible Relationship of Pleuropneumonia like Organisms to Reiter's Disease, Rheumatoid Arthritis and Ulcerative Colitis. R. Wallerstein, B. Vallee and L Turner.—p 134.

Use of Sulfadiazine and Penicillin for Treatment of Experimental Anthrax. F. M. Schabel Jr , H R. Reames and R. D. Housewright. —p 141.

Study of Group A Streptococci from Healthy Carriers, with Particular Attention to Mucoid Polysaccharide Production. R. M. Pike —p. 148

Effect of Quinine on Influenza Virus Infections in Mice. A. O. Seeler, O. Graessle and W. H. Ott —p 156.

Studies on Immunity to Asiatic Cholera: I. Introduction. W. Burrows, Adaline N Mather, Marian E. Elliott and Sylvia M. Wagner —p 159.

Id : II. O and H Antigenic Structure of Cholera and Related Vibrios. W Burrows, Adaline N. Mather, Virginia G. McGann and Sylvia M. Wagner.—p 168

Pleuropneumonia-like Organisms.—Wallerstein and his associates carried out a series of agglutinations on the serums of 102 patients for titers against one strain of pleuropneumonia-like organisms. Four significant titers were observed in patients each of whom had various combinations of colitis, arthritis, conjunctivitis, urethritis or cervicitis and skin lesions. Two of these 4 had the characteristic triad of arthritis, conjunctivitis and urethritis that justified a tentative diagnosis of Reiter's syndrome. No positive titers were obtained in patients with uncomplicated arthritis or colitis. The possible relationship of pleuropneumonia-like organisms to rheumatoid arthritis, chronic ulcerative colitis and Reiter's syndrome is discussed.

Journal of Investigative Dermatology, Baltimore

7:209-268 (Oct.) 1946

*Hypersensitivity to Sunlight and Dysmenorrhea Controlled with Benadryl Report of Case. W. G. Tyson.—p. 209.

Studies of Skin Lesions Under Filtered Ultraviolet Radiation After Intravenous Injection of Fluorescein: Preliminary Report. F. Herrmann and N. B. Kanof.—p. 210.

Acidity of Surface of Scalp and Other Areas of Skin in Children. F. Herrmann, H. Behrendt and Florentine L. Karp —p. 215.

Methods for Rapid Evaluation of Beneficial and Harmful Effects of Agents Applied to Human Skin. M. B. Sulzberger, R. L. Baer, A. Kanof and Clare Lowenberg —p. 227.

Fungistatic Agents for Treatment of Dermatophytosis. J. G. Hopkins, J. K Fisher, A. B. Hillegas and others.—p. 239.

Benadryl for Hypersensitivity to Sunlight and Dysmenorrhea.—A Negro woman aged 32 had begun to develop severe urticarial wheals five years before when exposed to even small amounts of sunlight. The urticaria was intensified during menstruation. After various treatments had proved ineffective, benadryl in daily oral doses of 100 to 200 mg. controlled not only the urticarial sensitivity to light but also the severe dysmenorrhea.

Journal of Pharmacol. & Exper. Therap., Baltimore

88:1-108 (Sept) 1946. Partial Index

Response of Hypodynamic Myocardium to Known Concentrations of Cardiac Glycosides W. F. White and W. T. Salter.—p. 1.
Comparison of Pressor Action of Aliphatic Amines E. E. Swanson and K. K. Chen—p 10
Digitalis III Relationship Between Potency and Baljet Reaction of Glycosides of Digitalis F. K. Bell and J. C. Krantz—p 14
Treatment of Di Isopropyl Fluorophosphate (DFP) Poisoning in Rabbits B. P McNamara, G. B Koelle and A. Gilman—p 27.
Synergisms and Antagonisms Between Physostigmine and Di Isopropyl Fluorophosphate in Cats R Koster—p 39.
Pharmacologic and Chemotherapeutic Properties of 3,4-Dimethyl 5 Sulfanilamido-Isoxazole. R. J Schnitzer, R. H. K Foster, N. Ercoli, and others—p 47.
Direct Action of Prostigmine on Skeletal Muscle Its Relationship to Choline Esters. W F Riker Jr and W. C. Wescoe—p 58.
Biochemorphology of Nicotine I Observations on Effect of Progressive Degradation of Pyrrolidine Ring P S Larson, J. J. Schwartz, J K Finnegan and H B Haag—p 82.
Metabolic Fate of Acetanilid and Other Aniline Derivatives I Major Metabolites of Acetanilid Appearing in Urine. L A Greenberg and D Lester—p 87
Arsine Poisoning, Mode of Action and Treatment C. J. Kensler, J. C. Abels and C P Rhoads—p 99.

Journal of Thoracic Surgery, St. Louis

15:297-372 (Oct) 1946

Direct Approach to Cardiovascular Diseases C S Beck—p 297
*Surgically Removed Foreign Body Embolus in Pulmonary Artery. S Welin, C A Hamberger and C Crafoord—p 302
Peptic Ulcer of Esophagus P R Allison—p 308
*Intrathoracic Gastric Cyst J A Dickson, O T Clagett and J R. McDonald—p 318
Crushing Injuries of Chest R Robertson—p 324
Acute Suppurative Mediastinitis R Adams—p 336
Open Pneumonolysis Adjunct to Pneumothorax and Closed Pneumonolysis O C Brantigan—p 341.
Initial Surgery of Thoracoabdominal War Injuries R H Betts—p 349.
Arterial Injuries of Thorax H D. Adams—p 365

Surgically Removed Foreign Body Embolus.—Welin and his associates report the surgical removal of a foreign body from the left lung of a man aged 21. While working in the forest a splinter from an iron wedge struck him and entered the left groin He was operated on for a lesion of the femoral vein and later for arteriovenous aneurysm Since then he has had pain and swelling of the left leg One year after the accident the patient caught cold and had a cough followed by an acute attack of ague and a stitch in the left side of the back. The diagnosis of foreign body embolism in the pulmonary artery was made by combining ordinary x-ray examination with bronchoscopy. The patient emphasized that there was nothing to indicate inhalation; he had not received any direct injury on the penetration of the splinter, so that the only possible way in which the foreign body could have entered was through the femoral vein of the groin and by the blood stream into the pulmonary artery. The foreign body was extracted by thoracotomy plus arteriotomy followed by vascular suture

Intrathoracic Gastric Cyst.—Dickson and his co-workers report the surgical removal of a congenital gastric cyst from the mediastinum of a girl aged 10 The patient gave a long history of repeated "pneumonic" attacks X-ray examination revealed a massive atelectasis of the lower lobe of the left lung and a portion of the upper lobe. There was a shift of the heart and mediastinum to the left side On bronchoscopy a large amount of purulent secretion was aspirated from the left side. Surgical intervention revealed a large cystic mass with partial extension below the diaphragm

Michigan State Medical Society Journal, Lansing

45:1135-1286 (Sept.) 1946

Case Reports of Dissecting Aneurysm P. G. Henley and L J. Gariepy.—p 1203.
Treatment of Subacute Bacterial Endocarditis with Penicillin—with Emphasis on Present Day Conclusions: Case Report of Disease Successfully Arrested by Massive Doses of Penicillin. H. L Smith and E. W. Ebinger.—p 1213.
Protecting People of Michigan from Tuberculosis. G. A. Sherman.—p 1220.
Hansen's Disease: New Name for an Old Condition. H. A Lichtwardt.—p 1221.

Minnesota Medicine, St. Paul

29:849-960 (Sept) 1946

Coronary Heart Disease—The Occupational Disease of Doctors. N. C. Gilbert—p. 881.
Coronary Heart Disease: Prognosis and Life Adaptation. A. R. Barnes.—p. 886.
Treatment of Coronary Emergency. R. V. Sherman—p. 890.
Outlook for Postwar Medicine as Seen by Radiologist. B. R. Kirklin—p 893
Surgical Treatment of Bronchiectasis T J. Kinsella—p. 898.
Value of X Ray Examination in Diagnosis of Ruptured Intervertebral Disk. H. O. Peterson—p. 904.

29:961-1072 (Oct) 1946

Centenary of Demonstration of Ether Anesthesia O. W. Parker.—p. 993.
Brief Survey of Prostatic Surgery C. D Creevy—p 995.
Double and Accessory Urethra G. W. Irmisch and E N. Cook—p 999.
Some Experiences in Treatment of Chronic Suppurative Otitis Media E P. McElmeel—p 1003
Intraocular Malignant Melanomas of Choroid: Report of 3 Cases. W. J. Bushard—p 1005
*Intrapleural Penicillin Therapy in Tuberculosis and Mixed Infection Empyema F. F Callahan and A G Sanderson—p 1008
Development of Program of Health Service in Industry. H. R. Hennessy—p. 1012.

Penicillin in Tuberculosis and Mixed Infection Empyema.—According to Callahan and Sanderson, all tuberculous persons in whom empyema develops should be studied for infections with secondary pyogenic organisms as well as for tubercle bacilli When secondary pyogenic organisms are found the patient should have the benefit of intrapleural penicillin therapy. Whether it should be combined with intramuscular penicillin treatment should depend on the individual case It is a mistake to expect benefit from penicillin therapy in cases of uncomplicated tuberculous empyema.

New Jersey Medical Society Journal, Trenton

43:357-400 (Sept) 1946

Cancer Program in New Jersey: Part I Diagnostic and Therapeutic Cancer Clinics Prepared by the Advisory Committee on Cancer Control of the Medical Society of New Jersey—p 360.
Diabetes in Children S Weiss—p 365
Newer Knowledge of Malaria J. B Rice—p 368.
Occlusion Dressing in Treatment of Dermatoses O. J. Sokoloff.—p 373
Premature Labor R. A. MacKenzie—p 376
Protein Hydrolysate Ointment Preliminary Report. P. C. Wiesenfeld.—p 383.

43:401-446 (Oct.) 1946

Progress in Reorganization of Medical Services in Veterans Administration P. R Hawley—p. 405
Use of Oxygen by General Practitioner R. E. Brenneman—p. 410.
Esophageal Hiatus Hernia L L Perkel—p 414
Group Practice Answer to State Medicine M G Bensley—p. 418.
Treatment of Carcinoma of Rectum D. B Pfeiffer—p. 421.

Oklahoma State Medical Assn. Jour., Oklahoma City

39:325-358 (Aug) 1946

Acute Otitis Media, Its Management by General Practitioner and Pediatrician. J. D Singleton—p 325
Low Spinal Anesthesia in Obstetrics P. Risser and R. Emanuel.—p. 329.
Practical Treatment of Neuroses. M P. Prosser—p 333.
Nasal Fractures O. A Watson—p. 337.

39:359-394 (Sept.) 1946

Diagnosis and Treatment of Pernicious Anemia. R. L. Haden—p. 359.
Survey of the Pneumonias S. Goodman—p. 363.
Myasthenia Gravis T. R Turner.—p 366.

39:395-442 (Oct) 1946

Pulmonary Sarcoidosis H. Hauser—p 395.
The Rh Blood Factors H. F Marsh—p 403.
X Rays in Evacuation Hospitals E D. Greenberger.—p. 408.

Psychiatric Quarterly, Utica, N. Y.

20:371-548 (July) 1946 Partial Index

Allergic Reaction in Case Treated with Curare Electric Shock, Followed by Recrudescence of Psychosis. S Major.—p. 371.
Mental Disorder Following Service Discharge. J. A. Campbell—p. 375.
Statistical Investigation of Incidence of Mental Disorder in Norway. O Oedegaard—p 381.
Obesity and Neurosis: Case Report. H. B Richardson—p 400.
Further Studies in Use of Adrenalin in Treatment of Persistent Anxiety States. D. E. Cameron—p. 425.
Psychiatric Reactions to Wartime Stress as Seen in Members of Armed Services Referred to Private Mental Hospital. C. T. Prout.—p. 434.

Public Health Reports, Washington, D. C.

61:1339-1368 (Sept. 13) 1946

Health Conditions in Certain Large Cities of Far East After Liberation. H. R. O'Brien.—p. 1339.

61:1369-1396 (Sept. 20) 1946

The Health Center: Adaptation of Physical Plants to Service Concepts. J. W. Mountin and A. Hoenack.—p. 1369.
Serologic Relationships in Epidemic-Endemic Typhus Group as Determined by Complement Fixation. Ida A. Bengtson.—p. 1379.

Rocky Mountain Medical Journal, Denver

43:697-780 (Sept.) 1946

Presidential Address. W. A. Bunten.—p. 716.
Surgical Treatment of Pituitary Adenoma. R. M. Stuck.—p. 721.
Relation Between Frequency of Alternating Current and Convulsive Threshold of Albino Rat. L. A. Woodbury and C. A. Swinyard.—p. 723.
Prepuberal Hyogonadotropic Eunuchoidism. C. G. Heller.—p. 723.

43:781-868 (Oct.) 1946

Presidential Address. A. C. Sudan.—p. 799.
Doctor's Answer to Socialized Medicine. M. C. Smith.—p. 805.
Use of Electroconvulsive Therapy as Office Procedure in Certain Mental Disorders. L. G. Moench.—p. 808.
Use of Penicillin in Treatment of Syphilis. M. S. Falk.—p. 813.
Scientific Findings on Death and Coroner's Inquest. T. R. Taylor.—p 817.

Southern Medical Journal, Birmingham, Ala.

39:761-846 (Oct.) 1946

Hypertension of Renal Origin: Case Reports. G. Carroll.—p. 761.
*Bacterial Endocarditis of Tricuspid Valve. L. Karotkin and P. Marcuse.—p. 769.
Tularemia: Treatment of Case with Streptomycin. W. G. Hartnett and S. G. Mollica.—p. 774.
Treatment of Herpes Zoster. W. W. Lovell.—p. 777.
*Spontaneous Rupture of Kidney: Case Report. D. E. Beard.—p. 780.
Volvulus of Stomach. C. A. W. Zimmermann III.—p. 782.
Psychosomatic Evaluation of Psychiatric and Endocrinologic Factors in Menopause. M. H. Greenhill.—p. 786.
Comparison of Effectiveness of Radiation Therapy and Estrogenic Substances in Management of Hyperthyroidism. E. H. Planck.—p. 794.
*Studies on Neuromuscular Dysfunction: VII. Use of Curare to Differentiate Muscle Spasm from Organic Changes in Limitation of Passive Motion at Joints. C. W. Jones, C. B. LeCompte and H. Kabat.—p. 799.
Vein Ligation in Thrombophlebitis. C. D. Hershey and R. B. Bailey.—p. 804.
Value of Influenza Virus Vaccine Types A and B. L. L. Friedman.—p. 809.
Effect of Vitamin A Administration on Defective Color Vision. J. A. Richardson and F. W. Kinard.—p. 811.
Report of Case of Aortic Aneurysm Rupturing into Superior Vena Cava. D. C. Wunderman.—p. 813.

Bacterial Endocarditis of Tricuspid Valve.—Karotkin and Marcuse say that the clinical picture of bacterial endocarditis of the left chambers of the heart is well known, while the clinical picture of bacterial endocarditis involving the right chambers is less well known. Early diagnosis of the involvement of the right side is difficult because signs of organic heart disease are often lacking, especially when the tricuspid valve is the only one involved. The blood culture usually remains negative, and systemic embolism fails to appear unless and until tissue breakdown occurs in the lungs. Cases in which the right and left heart chambers are both involved are more common than those in which the right side alone is involved. One should therefore always suspect the coexistence of a right sided lesion *in a patient with known left sided bacterial endocarditis.* Likewise, when a left sided bacterial endocarditis is suspected by bacteremia and evidence of systemic embolism fails to appear, one should suspect an isolated lesion on one of the right sided valves. Three different modes of pathogenesis arise for consideration in case of bacterial endocarditis: (1) bacterial involvement of a valve previously damaged by rheumatic endocarditis, congenital defect or trauma, (2) bacterial endocarditis as a sequel of pneumonia and (3) bacterial endocarditis as part of generalized septicemia. The findings in bacterial endocarditis of the bicuspid valve correspond with the rare occurrence of isolated rheumatic lesions on the tricuspid and with the fact that the valve is more likely to be implicated when the virulence of the organism is high. The clinical picture may become atypical early in the course of the disease because of impaired efficacy of the lung filter due to the presence of pulmonary lesions.

Spontaneous Rupture of Kidney.—According to Beard, spontaneous rupture occurs in a kidney already damaged by disease in which there is no history of trauma. Hydronephrosis, pyelonephritis, pyonephrosis, tuberculosis, abscess, infarct, nephritis, tumor, aneurysm and renal calculus have been the predisposing causes in the reported cases. The tear may be in the renal pelvis or in the parenchyma, the former of which leads to bleeding into the renal fossa while the latter leads to extravasation of urine within the perirenal fascia or peritoneum. In a kidney thus weakened by disease the slightest indirect trauma may rupture the organ. The author reports a case in which the rupture occurred while the patient was in bed. The condition can be diagnosed by careful history, physical examination and pyelography. Spontaneous rupture of the kidney is a surgical emergency, and prompt intervention is often a life saving measure. The case reported illustrates the prompt response to surgery with the postoperative administration of streptomycin in the presence of Proteus bacillus infection.

Curare to Differentiate Muscle Spasm from Organic Changes.—Jones and his associates experimented with curare in the differentiation of organic from functional factors in limitation of passive motion at joints. Seventeen patients showing limitation of passive motion at joints were given curare intravenously in the form of "intocostrin." Each patient received morphine sulfate $\frac{1}{8}$ grain (8 mg.) and atropine sulfate $\frac{1}{200}$ grain (0.3 mg.) subcutaneously thirty minutes before the administration of curare. "Intocostrin" was administered in the operating room by a trained anesthetist, with tracheal tube, respirator and neostigmine to counteract the curare effect close at hand. The "intocostrin" was injected slowly into the antecubital vein. Each patient was given the amount of curare that rendered him unable to lift his head from the table and produced weakness of the hand grip and of the thigh muscles. Some patients were given an initial dose of 50 mg. while others received 20 mg. of "intocostrin." Additional curare was injected at intervals of two to four minutes until the desired effect was produced. The largest dose given was 100 mg. Eight cases showed increases in range of motion while under the curare effect, while 9 cases showed no essential change. The test should be of practical importance in establishing the correct approach to therapy. In 5 of 7 fracture cases which showed increase in range of motion from curare the improvement was retained in full or in part, which suggests the possibility of using curare as an adjunct to treatment of such cases. Curare can relieve joint pain by relaxation of muscle spasm.

Tennessee State Medical Assn. Journal, Nashville

39:311-346 (Sept.) 1946

Relief of Sulfadiazine Anuria by Spinal Anesthesia: Case Report. C. E. Newell.—p. 311.
Demerol Analgesia in Labor Combined with Spinal Anesthesia for Vaginal Delivery: Report of 1,000 Cases. A. K. Turner.—p. 314.
Para-Aminobenzoic Acid in Prevention of Sunburn. C. Shaw.—p. 329.

39:347-396 (Oct.) 1946

Proceedings of House of Delegates, One Hundred and Eleventh Annual Meeting, Tennessee State Medical Association, Hotel Andrew Johnson, Knoxville, April 9-11, 1946.—p. 347.

Wisconsin Medical Journal, Madison

45:1021-1112 (Nov.) 1946

Trends and Progress in Neuropsychiatry. H. H. Reese.—p. 1047.
Antibiotics. W. W. Spink.—p. 1053.
*Erysipeloid. W. L. Macaulay.—p. 1057.
Is Overspecialization a Threat? C. A. Dawson.—p. 1045.

Erysipeloid.—Erysipeloid of Rosenbach is a disease in man which is caused by Erysipelothrix rhusiopathiae, the organism of swine erysipelas. The first 4 of the 5 cases presented by Macaulay are typical of the clinical picture of erysipeloid. Three cases occurred in butchers and serve to reemphasize the occupational nature of the disease. The first 2 cases demonstrate the apparent inability of sulfonamides to control erysipeloid. The second case later responded promptly to penicillin. The third and fourth cases showed rapid subsidence of symptoms with penicillin as the sole therapeutic agent. The author comments on the recent increase in cases of erysipeloid and thinks that more can be expected. Penicillin is the best treatment.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Australian J. Exper. Biol. & M. Science, Adelaide

24:159-252 (Sept.) 1946. Partial Index

Reduction of Nitrate, Nitrite and Hydroxylamine. J. Lascelles and J. L. Still.—p. 159.
Antibacterial Activity in Members of Higher Fungi: 1. Cortinarius Rotundisporus and Psalliota Xanthoderma Genev. Nancy Atkinson.—p. 169.
Structure and Elasticity of Cortex of Keratin Fibers: Electron Microscope Study. E. H. Mercer and A. L. G. Rees.—p. 175.
Clotting in Heart and Brain: Experimental Study. E. R. Trethewie.—p. 185.
Inactivation of Vaccinia and Ectromelia Virus Hemagglutinins by Lecithinase. J. D. Stone.—p. 191.
Lipid Hemagglutinins. J. D. Stone.—p. 197.
*Serologic Response to Influenza B Infection in Human Beings: Differentiation of Specific and Nonspecific Type Reactions. F. M. Burnet and J. D. Stone, with technical assistance of Margaret Kerr.—p. 207.
Liberation of Aneurin, Cocarboxylase, Riboflavin and Nicotinic Acid from Autolysing Yeast Cells. K. T. H. Farrer.—p. 213.
Cystine, Methionine and Sulfate Excretion in Cystinuria. Joan B. Cleland.—p. 219.

Specific and Nonspecific Reactions to Influenza B Infection.—Burnet and Stone show that convalescent serums taken after an influenza B infection show specific and nonspecific types of response. In children and adolescents the commonest type is specific, showing a much higher titer both by hemagglutination and by allantoic methods against a homologous strain than against the classic strain Lee. Most adults show equivalent titers against the two types of virus, but a proportion of specific responses is found. Influenza B virus strains isolated in 1943 or 1945 form a fairly homogeneous group when tested with specific human serums and differ sharply from Lee. The significance of these findings in relation to immunization against influenza B is briefly discussed.

British Journal of Radiology, London

19:393-436 (Oct.) 1946

Response of Tradescantia Pollen Grains to Radiation at Different Dosage Rates. P. C. Koller.—p. 393.
X-Ray Therapy with Continuously Rotating Beam: Part 1. Apparatus and Associated Physical Problems. R. J. Munson.—p. 405.
Radiologic Diagnosis of Lumbar Intervertebral Disk Lesions: Report of 160 Cases. H. W. Gillespie.—p. 420.
Case of Intersigmoid Hernia with Illustrations of X-Ray Appearances. G. G. Gotlieb.—p. 429.
Radiologic Investigation of Case of Pedal Hyperphalangism and Supernumerary Phalangeal Epiphysis. R. O'Rahilly.—p. 432.

British Medical Journal, London

2:601-638 (Oct. 26) 1946

Blood Group Rh: 1. Review of Antigenic Structure and Serologic Reactions of Rh Subtypes. D. F. Cappell.—p. 601.
*Receptivity of Cervical Mucus to Spermatozoa. Mary Barton and B. P. Wiesner.—p. 606.
*Acute Osteomyelitis of Lumbar Spine in Adult. H. Freeman.—p. 610.
Nicotinamide Deficiency After Oral Administration of Penicillin. P. Ellinger and F. M. Shattock.—p. 611.
Work of Government Lymph Establishment: July 1898 to June 1946. H. S. Fremlin.—p. 613.

Receptivity of Cervical Mucus to Spermatozoa.—According to Barton and Wiesner, semen and cervical mucus are virtually immiscible. Fecundation depends on the ability of the sperms to penetrate the interface between mucus and semen. In many sterile women the mucus does not admit or sustain spermatozoa. The nonsurgical treatment of cervical dysfunction is briefly surveyed.

Osteomyelitis of Lumbar Spine in Adult.—A man aged 43 presented symptoms that were regarded as indicative of Pott's disease. Laboratory examinations, however, suggested a pyogenic rather than a tuberculous abscess. Aspiration of the abscess yielded pus with Staphylococcus aureus. The further development and exposure of the abscess indicated that the pus had tracked from the lumbar spine into the pelvis, along the structures, passing through the sacroiliac foramen to the gluteal region and to the front of the thigh, where pressure on the femoral vein resulted in generalized swelling of the limb. The abscess cavities were insufflated with sulfathiazole powder mixed with 100,000 units of penicillin, and a drainage tube was inserted. A transfusion of 2 pints of blood was given, and penicillin in 30,000 unit doses intramuscularly was continued four hourly. The patient recovered, so that he could walk freely without discomfort. Freeman points out that the case is of special interest because of the insidious onset, the age of the patient and the resemblance to tuberculous disease of the bone and the development of a large collection of pus in the presence of a small area of bone necrosis.

East African Medical Journal, Nairobi

23:257-292 (Sept.) 1946

Epidemiology of Malaria in East Africa Command. D. Bagster-Wilson.—p. 258.
*Efficacy of Insecticidal Sprays in Aircraft. P. C. C. Garnham.—p. 272.
Tropical Myositis in East Africa. O. N. Ransford.—p. 278.
Penicillin Treatment of Acute Gonorrhea and Its Complications, and Early Syphilis (in Africans) as Practiced in East Africa Command. G. C. Cochrane.—p. 285.
Treatment of Early Syphilis (in Africans) with Penicillin Sodium. G. C. Cochrane.—p. 287.

Efficacy of Insecticidal Sprays in Aircraft.—According to Garnham, routine disinfestation of aircraft is now carried out practically everywhere in the tropics. The author describes a simple test which uses mosquitoes in cages as an indicator to check the efficacy of the disinfestation of aircraft. The results suggest that the simple methods used in the disinfestation of aircraft are adequate, even for the more inaccessible parts of the machines, provided the dosage is large enough and the solutions are freshly prepared. There is one exception, however, and that is the apparent ability of mosquitoes to survive even heavy doses if protected by any sort of cloth. Although the initial excitatory effect of the insecticide may drive out mosquitoes hidden in coat sleeves and similar places, the danger remains.

Lancet, London

2:587-626 (Oct. 26) 1946

Coronary Disease: Harveian Oration of 1946. M. Cassidy.—p. 587.
Serum Protein Level of Indian Soldiers. M. Hynes, M. Ishaq and T. L. Morris.—p. 590.
*Leptospirosis Canicola: Case Treated with Penicillin. M. D. Baber and R. D. Stuart.—p. 594.
*Malignant Granuloma of Nose. S. W. G. Hargrove, J. H. Fodden and A. J. Rhodes.—p. 596.
Psychiatry at Corps Exhaustion Center: Technic of Rapid Psychiatric Assessment. F. P. Haldane and J. L. Rowley.—p. 599.
Malted Foods for Babies: Trials with Young Rats. Harriette Chick and E. B. Slack.—p. 601.

Penicillin in Leptospirosis Canicola.—Baber and Stuart's patient was a boy aged 11 who had bathed in the Thames and whose disorder was diagnosed as infection with Leptospirosis canicola by the demonstration of a rising serum antibody titer to L. canicola during the course of the illness and by absorption tests with homologous and heterologous strains of leptospira. The patient was treated with 220,000 units of penicillin, and dramatic clinical improvement followed. Since this is the first case of L. canicola infection discovered in Britain, it is unfortunate that the organism was not isolated from the patient, but on serologic grounds the evidence is quite definite.

Malignant Granuloma of Nose.—In the man whose illness is described by Hargrove and his associates the main feature was a rapidly spreading ulcerative condition involving the antrum, nose and palate. The histologic picture was that of an acute granuloma with necrosis. It is impossible to decide whether the condition was due to an infection or to an unusual type of sarcomatous change.

Medical Journal of Australia, Sydney

2:361-396 (Sept. 14) 1946. Partial Index

Functional Disorder Sequent to Organic Disease. A. W. Holmes à Court.—p. 361.
Typing of Bacterium Typhosum. G. Buckle.—p. 365.
Looking Backward: Quarter-Century of Pediatrics. D. G. Croll.—p. 371.
Sexual Problems of Childhood and Adolescence. H. M. North.—p. 376.

2:397-432 (Sept. 21) 1946. Partial Index

Singapore and After: Brief Historical Survey of Activities of Australian Army Medical Corps in Malaya. A. P. Derham.—p. 397.
Some Aspects of Protein Metabolism in Infants and Children. F. W. Clements.—p. 404.

Tubercle, London

27:151-172 (Oct.) 1946

*Aspiration Type of Congenital Tuberculosis. W. Pagel and S. Hall.—p. 153.
"Officer Into Physician." F. Ridehalgh.—p. 159.
Morbidity of Tuberculosis—Statistical Aspects: II. N. J. England.—p. 162.
Dicumarol Prophylaxis in Thoracic Surgery. H. M. Maier and M. M. Alexander.—p. 167.

Aspiration Type of Congenital Tuberculosis.—Pagel and Hall report the universal spread of submiliary foci throughout both lungs of a girl aged 17 days and confluent caseation in the hilar lymphatic glands. Caseous plugs abounding with acid fast bacilli were found to fill dilated bronchioli and alveolar ducts, forming "multilocular" foci resembling those obtained in primary intratracheal infection with heavy inocula and consistent with infection by coarse aspiration. A congenital origin suggests itself because of (1) the wide extent of the lesion, (2) the picture differing from the pulmonary "primary complex," (3) the extensive cellular reaction of the lung stroma, incompatible with seventeen days' duration. The wide and obviously primary involvement of the bronchial system points to infected amniotic fluid as the source and to aspiration as the mode of infection. Although clinical or pathologic data as to the condition of the mother, placenta and amniotic fluid were not available, it is reasonable to suppose that the latter was at one time infected with tubercle bacilli and aspirated.

Presse Médicale, Paris

54:557-568 (Aug. 31) 1946

Symptomatologic Value of Cholinesterase of Blood. P. Cristol, P. Passouant, C. Benezch and Miss J. Dutarte.—p. 557.
*Malignant Primary Tuberculosis of Adults. A. Dufourt.—p. 558.
Intravenous Injections of Atropine and Procaine Hydrochloride in Syndromes Presented by Pain Occurring During Digestion. P. Oury, A. Bensaude and J. Brossard.—p. 559.

Malignant Primary Tuberculosis of Adults.—According to Dufourt, severe and often fatal pulmonary tuberculosis resulting from primary infection in adults represents in the great majority of the cases the first and secondary stage rather than the third stage of the disease. Either the patient may have primary cavities, or the breaking down of a lymph node may lead to bronchopneumonia or to miliary or generalized tuberculosis resembling that occurring in children. Death may result within the first year or within the first months of an exacerbated second stage. Only a few patients have been observed who presented the third stage after a brief secondary stage of tuberculosis. In 1 of the author's patients the allergy was detected. This was followed by pleurisy; after an interval of six months osteitis developed in twelve ribs and was rapidly followed by dissemination of the process. A severe and prolonged infection may be responsible for malignant primary tuberculosis of adults.

Semaine des Hôpitaux de Paris

22:1413-1486 (Aug. 14) 1946. Partial Index

Use of Isotopes in Biology. M. Berger.—p. 1413.
Study of Mechanism of Action of Bromotriphenylethylene by Using Radioactive Bromine of Estrogenic Substance as Indicator. M. Berger.—p. 1416.
Gangrene and Steroid Hormones: Experimental Study on Antagonistic Effect of Sex Hormones and of Some Steroids on Vasoconstrictive Action of Ergotamine. G. Simon.—p. 1420.
Anatomic and Functional Renal Disturbances in Course of Anuresis Due to Sulfonamide Treatment: Clinical and Experimental Study. P. Castaigne.—p. 1425.
Disturbances of Growth Determined by Experimental Renal Lesions. P. Castaigne.—p. 1435.
Study of Respiratory Function in Hospital and in Occupational Medicine Laboratory. P. Tulou.—p. 1446.
Experimental Study of Muscular Fatigue and Work Capacity in Animals. C. Laroche.—p. 1458.
*Capillary Resistance and Vitamin with Effect on Permeability. P. Galmiche.—p. 1463.

Capillary Resistance and Vitamin P.—Galmiche reports the occurrence of scurvy in a woman aged 75. The food supply of the patient was that provided by the ration card. She ate only boiled food and abstained from eating raw fruit and vegetables. Peribuccal purpura associated with severe chills was followed by generalized purpura involving the mucous membranes and the viscera. The patient's condition deteriorated in spite of intravenous administration of 1 Gm. of ascorbic acid daily for twenty days. Parenteral administration of 5 Gm. of vitamin C daily for four days was ineffective. An intravenous injection of 12 mg. of epicatechine (one of the isomers of 3,5,7,3'4' penta hydroxyphenyl benzo-gamma-pyrane) was given, and two more injections of 8 Gm. were given on the two following days. There was rapid improvement, and complete recovery resulted within a few days. The bleeding time was reduced from 14 minutes to 3 minutes, and hematuria subsided.

Cardiologia, Basel

10:193-304 (No. 4/5) 1946

Normal Contraction and Auricular and Ventricular Fibrillation in Turtle (concluded). P. Rijlant.—p. 193.
Influence of Vegetative Drugs on Changes in T Waves in Electrocardiogram Made After Severe Exercise. A. Walser.—p. 231.
*Repeated Familial Incidence of Acquired Failures of Cardiac Valves. H. K. v. Rechenberg.—p. 251.
Local Amyloidotic Changes Simulating Arteriosclerosis in Heart. S. Hirsch.—p. 280.
Cardiac Trauma Produced by Blunt Force (Commotio and Contusio Cordis). M. Kartagener.—p. 289.

Familial Incidence of Cardiac Failure.—Von Rechenberg reports the occurrence in a family of rheumatic cardiac involvement in the father, in 1 son and 1 daughter and in 1 illegitimate son of the mother. In 3 of the patients the cardiac failure was associated with acute rheumatic polyarthritis. Familial incidence of cardiac failure suggests that hereditary factors may play a part in the pathogenesis of acquired cardiac failures. These factors are (1) hereditary predisposition to diseases in which involvement of the heart is part of the disease, (2) congenital cardiac inferiority on a hereditary base and (3) local hereditary predisposition of the valves toward disease. The hereditary predisposition may, from the genetic point of view, be always the same although its manifestations may vary considerably, depending on the predominance of one or the other of the hereditary factors, on the time when this factor becomes effective and on the influence of the environment. Severe congenital defects of the heart, simple uncomplicated vitia cordis, fetal endocarditis and acquired failure of the cardiac valves may be interrelated so far as the genesis and the evolution of pathologicoanatomic events are concerned. Familial incidence of cardiac failure depends on a hereditary predisposition but does not represent a specific hereditary disease. Hereditary incidence of cardiac failure is related to congenital heart failure, rheumatism and bacterial endocarditis.

Schweizerische medizinische Wochenschrift, Basel

76:791-814 (Aug. 24) 1946. Partial Index

*Rheumatic Perispondylitis of Cervical Spinal Column and Cervical Syndrome. W. Belart.—p. 797.
Substances Inhibiting Thyroid Action and Endemic Struma. H. J. Wespi-Eggenberger.—p. 801.
*Carcinoma of Islands of Langerhans Without Endocrine Manifestations. W. Hess.—p. 802.
Use of Hormone of Adrenal Cortex in Eclampsia. W. Laubscher.—p. 804.

Rheumatic Cervical Perispondylitis and Cervical Syndrome.—Belart designates as cervical syndrome a clinical entity which manifests itself chiefly in paresthesias in the hands with neuralgiform pains and a leaden heaviness in the arms. Later this becomes complicated by stiffness of the neck and radiation of pain from the neck to the occiput and the shoulders. This syndrome is traced back to rheumatic perispondylitis or rheumatic inflammation of the soft tissues of the spinal column, particularly to involvement of the ligaments and to multilocular tendoperiostitis. These spread to the sympathetic nervous system centered there and cause various sympathetic disturbances. The terminal phase of the perispondylitis is spondylosis. As regards the etiology, not only the mechanism of focal infection plays a part but also the continuous spread from the tonsils. There may be a causal connection not only with spondylosis, which represents the terminal phase of perispondylitis, but also with muscular rheumatism, neuritis, neuralgia, osteoporosis of the spinal column, chronic meningitis and neurovegetative dystonia.

Carcinoma of Islands of Langerhans Without Endocrine Manifestations.—Hess was able to collect reports of 19 cases of carcinoma of the islands of Langerhans from literature. Whenever the sugar metabolism was studied in these cases hyperinsulinism was discovered, except in the thoroughly investigated case of Dubois-Ferrière. The author reports a case in which necropsy established a pancreatic carcinoma that originated in the insular tissue. In contradistinction to most other tumors of this type, this cancer had produced no insulin and had not produced hypoglycemia. This was explained by the fact that the cancer was composed exclusively of the endocrinically inactive alpha cells. This observation indicates that it is essential to differentiate between malignant insular tumors with hyperinsulinism (beta nesocytomas) and those without disturbance of the sugar metabolism (alpha nesocytomas).

Lisboa Medica, Lisbon

23:99-188 (March-April) 1946. Partial Index

*Infectious Mononucleosis in Puerperium, with Subclinical Infection of Newborn Infant. C. Trinção.—p. 146.

Infectious Mononucleosis in Puerperium.—A pregnant woman at full term developed acute urticaria without fever. Three days later she delivered a normal baby. She nursed the baby. One week after the delivery the patient presented symptoms of acute infection with fever, and tender, enlarged lymph nodes of the neck. Penicillin was not effective. The blood picture was characteristic for infectious mononucleosis. There was a leukocytosis. Nearly all lymphocytes were abnormal. The Paul-Bunnell test for infectious mononucleosis was positive for the blood serum but negative with the mother's milk. The disease subsided within twelve days. The baby was apparently normal. His blood showed the same changes as the mother's blood, with the same type of abnormality in the majority of the lymphocytes. Blood smears from 12 normal infants between 9 and 26 days old showed normal lymphocytes in all. This is the first case of subclinical infectious mononucleosis in an infant most probably acquired before birth.

Acta Chirurgica Scandinavica

94:193-384 (July 6) 1946. Partial Index

Aspects of Operative Treatment of Cancer Recti. K. A. Hultborn. —p. 193.
Harelip and Cleft Palate. P. Fogh-Andersen.—p. 213.
Differential Diagnosis and Treatment of Tuberculomas in Lung. E. Dahl-Iversen and P. Flemming Møller.—p. 243.
*Clinical Picture and Treatment of Pheochromocytomas of Adrenals. T. Espersen and E. Dahl-Iversen.—p. 271.
Mechanism of Infection in Chronic Relapsing Staphylococcic Diseases: Clinicobacteriologic Investigation Particularly on Furunculosis and Its Complications. M. Sulamaa.—p. 291.
Postoperative Blood Changes with Regard to Shock. S. Annersten and E. Norinder.—p. 320.
Acute Regional Enteritis. A. Homb.—p. 341.
Problem of Surgical Arrest of Massive Hemorrhage in Peptic Ulcer. G. Bohmansson.—p. 362.
Operation for Habitual Luxation of Thumb. S. von Stapelmohr.—p. 379.

Pheochromocytomas of the Adrenals.—According to Espersen and Dahl-Iversen a pheochromocytoma is a tumor caused by abnormal proliferation of mature medullary cells. The first of the 2 patients seen was a man aged 49 who had paroxysmal hypertension due to benign pheochromocytoma of the right adrenal. The epinephrine content of the blood was found to be from four to five times increased during attacks. Treatment with methyl thiouracil resulted in complete disappearance of the attacks. Good results were obtained by removal of the tumor, which weighed about 1,400 Gm. The second patient, a boy aged 10 years, had permanent hypertension due to a pheochromocytoma which operation through a left lumbar incision failed to demonstrate. The patient died six hours after the exploratory intervention. Necropsy revealed a malignant pheochromocytoma in front of the large vessels. It was connected by a small pedicle with the lower mesial angle of the left adrenal. The only effective treatment is extirpation as soon as the diagnosis has been established and the patient's condition permits. The preoperative treatment would be like that in extirpation of the adrenals. The authors think that it might be best to choose the abdominal approach in all cases of pheochromocytoma. When the tumor is large they recommend the use of Shipley's incision. The danger of shock during operation can be counteracted by adrenal cortex extract, blood transfusion and, if necessary, epinephrine.

Acta Psychiatrica et Neurologica, Copenhagen

21:1-816 (1-3) 1946. Partial Index

Dreamy States, Epileptic Aura, Depersonalisation and Psychasthenic Fits: Comments and Reflections. N. Antoni.—p. 1.
Treatment of Tabes Dorsalis with Artificial Fever: Hyperthermia Treatment. J. Boas.—p. 39.
*"Dynamite Encephalosis." B. Gerle.—p. 319.
Complications and Dangers in Use of Hypnotism: Brief Survey. A. Hofman-Bang.—p. 365.
Alcohol Paranoia. A. Petren.—p. 655.
Discharge of Psychiatric Patients After Hospitalization for Years. J. C. Smith.—p. 735.
Amyotrophic Cerebrospinal Syphilis. G. Vraa-Jensen.—p. 795.

"Dynamite Encephalosis."—Gerle reports that a man in the course of work with explosives, while doing home defense duty, once had to tie explosives together into small bundles. It was an unusually hot and humid day. The dynamite was packed in coarse paper, which had broken here and there, so that the patient now and again came into direct contact with the dynamite. He got hot and wiped the perspiration away repeatedly. About 7 p. m. the man asked for headache tablets. He was given some codeine. At 10 o'clock he suddenly became violent and had to be held by several men. On being transported to the hospital he coughed and vomited. He complained of heartburn and a severe headache. Motor agitation alternated with confusion. After five days he was discharged. There was a striking change in his behavior. His previous brightness and liveliness were gone. He was less alert, very moody, irritable and complaining. He showed amnesia for the time before his falling ill and the ride to the hospital. Headaches continued to trouble him. The headache is the cardinal symptom of glyceryl trinitrate intoxication. For about a month the patient showed lowered alertness, deficient concentration, increased fatigue, irritability and depression.

Nordisk Medicin, Gothenburg

30:1289-1352 (June 14) 1946. Partial Index

Biology of Lymphocyte: Review. E. Andreasen.—p. 1289.
Fatal Case After Intravenous Gonovaccine Therapy. C. E. Sonck. —p. 1293.

Hospitalstidende

Accumulation of Effect of Sunlight Compared with Seasonal Variation of Rickets and Tetany. P. Horstmann and Helge Petersen.—p. 1297.
Speed and Vision of Colored Light. W. Byrn.—p. 1300.

Duodecim

*Near Distance Roentgen Therapy. A. Pmar Arho.—p. 1303.
Overdosage of Vitamin D with Fatal Outcome. J. Jääskeläinen. —p. 1308.

Norsk Magasin for Lægevidenskapen

*Surgical Treatment of Tuberculous Pleural Empyema. H. F. Harbitz. —p. 1314.

Near Distance Roentgen Therapy.—Arho reports that primary healing occurred in 197 (93.3 per cent) of the 211 cases of skin cancer treated from 1938 to 1944 by Chaoul's modified method. Fourteen cases were resistant to the treatment, in 18 recurrence appeared; the unfavorable results in two thirds of these cases is ascribed to technical mistakes in treatment. In cancer of the eyelid near distance therapy seems superior to the usual roentgen and radium treatment, as the danger of irradiation cataract is reduced to a minimum. In benign skin disorders the method is as effective as other forms of irradiation. In palliative treatment of metastases from cancer of the breast and malignant melanoma it gives better results than the usual roentgen treatment, especially if the metastases extend over large areas.

Surgical Treatment of Tuberculous Pleural Empyema.—Harbitz describes 22 cases of chronic tuberculous pleural empyema treated during the last seven years. In 6 cases the pleural cavity was closed during the treatment; 16 were fistulous and drained. Radical thoracoplasty in several stages was done. The average duration of treatment was four months and three weeks. Two patients (1 with closed, 1 with fistulous empyema) died immediately, 5 (1 with closed, 4 with fistulous empyema) died later from their tuberculous disease. The surviving 15 are abacillary; 1 has a persisting fistula and amyloid degeneration, 14 are cured, and of these 13 have been working for from one and a half to seven years.

Book Notices

Harvey Cushing: A Biography. By John F. Fulton. Cloth Price, $5. Pp. 754, with illustrations. Charles C Thomas, 301-327 E. Lawrence Ave., Springfield, Illinois, 1946.

Previously to his death Dr. Harvey Cushing made a provision in his will that a sum of money be set aside to help defray the expenses of compiling an account of his life, should his wife and his literary executor feel that the publishing of his biography might be of interest or help to medical students. In the preface to his biography of Dr. Cushing Dr. John F. Fulton, who was for many years associated with him, emphasizes the intention to prepare a work which would have the medical student primarily in mind. At the same time the endeavor was made to produce a biography that would interest nonmedical readers. Thus the work, while voluminous, fails to devote much detailed attention to the technical phases of neurosurgery or to the pathology of tumors of the brain.

Fortunately for the biographer, Dr. Cushing had collected and annotated the papers related to his family for many years, he kept a diary and his case histories were likewise scrupulously prepared and preserved. Early in his career Dr. Cushing became facile in sketching, and his diary as well as his case histories were accompanied with sketches, many of which are reproduced in the book. Any one who had the privilege of meeting and talking with Dr. Harvey Cushing recognized in him an alert and sensitive mind and the spark that is characteristic of genius. Moreover, if genius is the capacity for taking infinite pains associated with hard work, that characterization even more certainly applied to Dr. Harvey Cushing.

Following a detailed introduction to the young man and to his family background liberally supplemented with quotations from letters and portions of the diary, Dr. Fulton describes the first trip abroad and the return of Cushing to Baltimore in 1896, where he became Halsted's assistant resident in surgery. It becomes clear that the young man during the period of his studies in medicine and his internship gave little indication of the greatness that was to follow. Yet at the same time, the mere keeping of the diary and the comments revealed him well above the average of medical students. We find him on several occasions in 1893 disgusted with his progress, suffering occasional headaches and at least twice contemplating suicide. Perhaps it is a mark of greatness to suffer frequently with the feeling of discontent and dissatisfaction. Even in the midst of these depressions there are gleams of humor in which he recounts some delightful anecdotes and makes a comment such as the one relative to having broken one of his molars on some boardinghouse tapioca. The five years at Johns Hopkins University influenced Cushing greatly. He derived much from his association with Halsted and no doubt began there his first interest in books, bookplates and the acquisition of a library.

In 1900 Cushing had to make one of those tremendous decisions that come to a young man—where he would go after the completion of his service with Halsted. He made the wise decision for further study rather than in favor of increased income elsewhere. The illness of Halsted gave him opportunity for a vast amount of surgical work which might not otherwise have been available to him.

Much of the rest of the life of Harvey Cushing has been described in many notices published at the time of his death, but these hardly give the intimate detail of the innumerable decisions that he had to make in matters related to surgical appointments, research and the cases in which he operated during the years of his career. His service in the first world war has been described in his own notebooks, but the letters and documents in Dr. Cushing's files provide background material and are highly instructive. One gets the picture of a genius, a veritable virtuoso who does not fit easily into any one's classification or regimentation and whom associates and others learned to respect for his special virtues and to forgive because of these special virtues for some extraordinary quirks of character. If there is any criticism to be made of this book, it is of its enormous detail, which will detract from the interest of many readers not specifically in the field of medicine. Medical readers once embarked on its text are likely to follow through page by page for the information and attitudes so clearly set forth. It might be well for the author and publisher to consider the employment of a competent biographer or writer to make from this large volume a work of perhaps 100 or 200 pages written especially for the public, which would benefit so much by knowledge of the career of Harvey Cushing. Those portions of his will pertaining to the biography and disposition of his library are cited in the appendix. They cast further light on the virtuosity of the greatest of brain surgeons.

The Care of the Aged (Geriatrics). By Malford W. Thewlis, M.D., Attending Specialist, General Medicine, United States Public Health Hospitals, New York. Fifth edition. Cloth. Price, $8. Pp. 500, with 65 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1946.

Dr. I. L. Nascher, generally recognized as the father of geriatrics, was the first man to apply the term to the study and treatment of conditions incident to old age. When he gave up private practice to enter the public welfare department of New York City, his mantle fell on his favorite pupil, Dr. Malford W. Thewlis. The first edition of Thewlis's Care of the Aged was published in 1919. The fact that the fifth edition is now off the press gives evidence that it has met a favorable reception from the medical profession. The volume has been completely revised and a number of new subjects have been included. It is divided into eight parts, on general considerations, geratology, medicolegal relations, miscellaneous geriatric problems, diseases of metabolism and endocrine disorders, infectious diseases and focal infection, systemic pathologic conditions and special topics. This edition, like its predecessors, is characterized by a common sense approach to the conditions peculiar to old age. It is so well written that reading it is a pleasure, and the pleasure is enhanced by the fact that the book contains no excess verbiage. An example of the common sense which marks the whole book is to be found in the section on logotherapy: "Logotherapy (Gk. *logos*, word; *therapia*, healing) might be defined as the therapeutic influence of words upon diseased persons. One's first impression might be that this is a form of psychotherapy which should be employed by psychologists and psychiatrists. This is not the meaning I wish to convey. On the contrary, a careful selection of words may spare the elderly patient much mental suffering, thus making it unnecessary for the psychotherapist to clean up the wreckage physicians have produced by a tyranny of words. It is obvious that severe emotional disturbances are often caused by the wrong choice of words." Geriatrics is becoming more and more a household word. Dr. Thewlis's book can be recommended to all who want to learn more about the subject.

Illustrations of Regional Anatomy. By E. B. Jamieson, M.D. Section I: Central Nervous System; Section II: Head and Neck; Section III: Abdomen; Section IV: Pelvis; Section V: Thorax; Section VI: Upper Limb; Section VII: Lower Limb. Sixth edition. Paper. Loose-leaf. Price, 12s ; 15s ; 10s ; 8s. 6d.; 7s. 6d ; 10s.; 12s. 51 plates; 64 plates; 44 plates; 35 plates; 32 plates; 42 plates; 52 plates. E. & S. Livingstone, 16 & 17 Teviot Place, Edinburgh 1, 1946.

These little volumes, one each for the central nervous system, head and neck, abdomen, pelvis, thorax, arm and leg, consist of a series of 6 by 8 inch plates bound in such a way that the sheets are removable for convenience in dissecting. They are printed in color on only one side of fairly heavy coated paper. There is no text, and only the briefest of legends appear beneath the pictures. The plates are completely and clearly labeled, and color is used unsparingly to differentiate structures. The unique character and value of the work lies in the original and lucid presentation of gross anatomy in a manner that can be easily comprehended by medical students. Dr. Jamieson states in the preface that the first edition, which appeared in 1934, was an outgrowth of the blackboard diagrams which he used in teaching his classes at the University of Edinburgh. One can well believe it, because successive revisions and additions have not changed the author's approach to his subject. The characteristic feature of the plates is still their simple and highly graphic character. Despite (or perhaps on account of) Dr. Jamieson's diagrammatic conceptions and bright colors, one somehow manages to get a clearer architectonic idea of the human body in much less time from these illustrations than from a more lengthy perusal of the standard textbooks of anatomy. From an esthetic standpoint or as a literal transcription of the appearance of anatomy the plates do not rate overly high. However, as illustrations, in the pure sense of the word, they are excellent. It is obvious that author and artists were not inhibited by precedent or current styles in anatomic drawing but knew exactly what they wanted to do and did it. A first impression of the plates is the extensive use of color. For instance, all pictures of bone show the articular surfaces in uniform purple. Tendons, ligaments and fascia are indicated by a bright green. One may wish that the colors, which are sometimes a bit violent, were a little more restrained, but undoubtedly they achieve the purpose the author had in mind. There are no subtleties in the plates nor is there any question about what they are meant to convey. Anatomists may find that the labeling on the plates, while always explicit, occasionally departs from the terminology used in this country. Gynecologists, who make a point of such things, may not agree with Dr. Jamieson on the large size of the perineal body as shown in the sectional views of the female pelvis. These are minor points, however, and have little weight against the overall high teaching value of the illustrations.

Thromboses artérielles: Physiologie pathologique et traitement chirurgical. Par René Leriche, professeur au Collège de France, avec la collaboration d'Ivan Bertrand, directeur de l'Institut de neurobiologie à la Salpêtrière. Paper. Price, 600 francs. Pp. 537, with 59 illustrations. Masson & Cie, 120 Boulevard Saint-Germain, Paris 6^{e}, 1946.

The remarkable intellectual resilience of the French, whose literary output is now gradually emerging after years of nightmare, is well documented in this monograph on arterial thrombosis. Leriche has written a true functional pathology of the vascular system restating and broadening his many pioneer views in the form of lectures presented at the Collège de France in 1944. In the preface he expresses regret for not documenting more of his recent views by animal experimentation; this was, however, obviously impossible during the German occupation. The monograph consists of a large number of clinical observations discussed in chapters on traumatic thrombosis, thromboangiitis, vascular sclerosis, coronary thrombosis and many other syndromes, which the author discusses from both the organic and the functional point of view. Leriche has stimulated more than any other man a phenomenal development of vascular surgery in the last twenty years. In the development of this field he has thrown out a multitude of ideas or novel conceptions; some of these have become accepted, are experimentally and clinically proved and have greatly enriched our tools of therapy. Others were erroneous, required modification or have gradually been eliminated. It is the typically French genius of Leriche to advance a subject on the basis of his clinical observations, deductions and analogies, which are so frequently frowned on by the sober research worker whose "feet are on the ground." While much material in this monograph sounds far from convincing and while much work will have to be done to document or disprove many of the statements, such work should prove an intellectual stimulus to those interested in vascular surgery and its advancing frontiers.

Body Mechanics in Nursing Arts. By Bernice Fash, B.P.E., B.S. Cloth. Price, $2.75. Pp. 130, with illustrations. McGraw-Hill Book Company, Inc., 330 West 42d St., New York 18, 1946.

This book is well set up and freely illustrated. The illustrations are well done as drawings and show considerable thought. Well controlled imagination has been used in the development of both the text and the illustrative drawings. As a teaching textbook its brevity and simplicity are good. As read by the person already well educated and well versed in nursing it would seem that a good share of the material was unnecessary. Many of the situations of bad posture described and their good postural alternates occur so automatically to one well acquainted with nursing and body posture that at first it seems strange to include them. The real worth of the book lies in the ability of the author to understand the student nurse's mind, get back to early essentials and realize that what perhaps seems obvious to the physician is an unexplored field to the student. The descriptions of methods of handling patients with greatest economy of effort and least danger of strain are really excellent.

X-Rays and Radium in the Treatment of Diseases of the Skin. By George M. MacKee, M.D., Professor of Clinical Dermatology and Director of Department of Dermatology (Skin and Cancer Unit) New York Post-Graduate Medical School and Hospital, Columbia University, New York, and Anthony C. Cipollaro, M.D., Assistant Professor of Dermatology and Assistant Director of Department of Dermatology (Skin and Cancer Unit) New York Post-Graduate Medical School and Hospital, Columbia University. Contributor: Hamilton Montgomery, M.D., Associate Professor of Dermatology, Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota, Rochester, Minnesota. Fourth edition. Cloth. Price, $10. Pp. 668, with 321 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1946.

This edition of MacKee's book is in every way an excellent and authoritative presentation of the subject of therapy of cutaneous diseases by x-rays and radium. It is shorter than its predecessors by some two hundred pages—always a welcome improvement—and there is better unity of organization of material in this edition than in the previous ones. This edition was written with but one collaborator, Dr. Cipollaro, and one contributor, Dr. Hamilton Montgomery, who wrote the complete and excellently illustrated chapter on pathologic histology of radiodermatitis. The book covers every phase of the subject from a historical introduction to a consideration of medicolegal aspects of x-ray and radium therapy. The chapters dealing with the fundamentals, the structure of matter, the nature of radiation, dosage, technic, physics, filtration, apparatus, protection, idiosyncrasy and biologic and biochemical effects of radiation are written with a clarity that makes a complicated subject interesting and easily understood. The material is amply illustrated. One half of the book is devoted to the treatment of various skin diseases from acne to zoster. This section is particularly practical, for it gives proper emphasis to the more important diseases. Actual dosages in roentgens and technical details with regard to filtration and treatment intervals are furnished to guide the practitioner. The undertone of conservatism in this section reflects interestingly the progress of dermatology in the past thirty years. Chemotherapy for some diseases and a better comprehension of the causation of others have replaced radiation therapy in many instances and, as the authors state in the preface, it is possible that radiation therapy will be employed even less frequently in the future. Nevertheless radiation therapy is still a most important modality and there may be many who will disagree with the authors' too conservative views. The book accurately reflects our present knowledge of radiation therapy; it is thoroughly up to date, complete, practical, well organized, fully indexed and excellently illustrated. It is recommended as a useful guide for any physician who employs x-ray and radium therapy for diseases of the skin.

What You Don't Know May Hurt You! By J. A. Rudolph, M.D., and Howard N. Rose, B.A. Cloth. Price, $1.50. Pp. 138, with illustrations. Dorrance & Company, 5th & Chestnut Sts., Philadelphia 6, 1946.

This small book is packed full of brief case reports illustrating various forms of allergy. It contains innumerable examples of possible allergies; possibly it contains so many that the point of the illustrations may become lost. Explanatory material is rather limited in quantity and elementary in type and is almost lost among the numerous illustrative case histories. In general, however, it should be useful to suggest possibilities for the cause of allergy and as a source of suggestions for possible approaches to treatment. Scientifically it is sound. Its brevity and its low price should make it a popular book among allergic patients and their long-suffering families.

Some Properties and Applications of D.D.T. Great Britain. Ministry of Supply, Chemical Defence Research Department. Paper. Price, 15 cents; 6d. Pp. 34. British Information Services, 30 Rockefeller Plaza, New York 20; His Majesty's Stationery Office, York House, Kingsway, London, W. C. 2, 1946.

This brief monograph summarizes much of the information now available concerning the chemistry, toxicity and uses of DDT. It has been compiled from published literature and from reports of work carried on within the United Kingdom and elsewhere. The monograph is not offered as a complete review of the subject but will provide for the average reader a useful guide for information on the physical and chemical properties of DDT, toxicity, formulas, means of dispersal and effectiveness.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

PENICILLIN BLOOD LEVELS

To the Editor:—What is the duration of effective blood levels of penicillin when 200,000 units is thoroughly emulsified with Emulgen (Lakeside) or Pendil (Endo). What dosage is recommended in severe infections? What is the average duration of effective blood levels of 300,000 units of penicillin in oil and wax? J. W. Mehaffey, M.D., Birmingham, Ala.

ANSWER.—It has been demonstrated by Romansky and others that single injections of 300,000 units in peanut oil and beeswax will give maximum levels in 75 to 80 per cent of cases of 0.1 unit per cubic centimeter for a period of twelve hours or longer. As far as is known, this is the only method that has been developed that delays the absorption of penicillin local deposits in muscles. The studies that have been made with lanolin and cholesterol-like substances such as Pendil and Emulgen have been so infrequent that there is not good evidence that these substances delay absorption of penicillin.

A careful search of the literature does not disclose information concerning penicillin levels in the blood or effectiveness in diseases other than gonorrhea when penicillin is injected in these water and oil emulsions. In the curves that have been published showing the levels after injection of penicillin in water and oil emulsion there is little evidence that the absorption is delayed and certainly the levels in the blood decrease rapidly after the first hour.

References:

Romansky, M. J.; Murphy, R. J., and Rittmann, G. E.: Single Injection Treatment of Gonorrhea with Penicillin in Beeswax-Peanut Oil, THE JOURNAL, June 9, 1945, p. 404.

Kirby, W. M. M., and others: Intramuscular and Subcutaneous Administration of Penicillin in Beeswax-Peanut Oil, *ibid.*, Dec. 1, 1945, p. 940.

Keefer, C. S.; Herwick, R. P.; Van Winkle, Walton, Jr., and Putnam, L. E.: New Dosage Forms of Penicillin, *ibid.*, Aug. 18, 1945, p. 1161.

Romansky, M. J., and Rittman, G. E.: Penicillin Blood Levels for Twenty-four Hours Following a Single Intramuscular Injection of Calcium Penicillin in Beeswax and Peanut Oil, *New England J. Med.* **233**: 577 (Nov. 15) 1945.

Romansky, M. J.: Current Status of Calcium Penicillin in Beeswax and Peanut Oil: Data from a Study of 600 Cases and Clinical Observations of 4,000 Patients Given 60,000 Injections, *Am. J. Med.* **1**: 395, 1946.

Cohn, A., and others: Treatment of Gonorrhea with Penicillin, *Ven. Dis Inform.* **27**: 154, 1946; Repository Injection of Penicillin in Water in Oil Emulsion, *Proc. Soc. Exper. Biol. & Med.* **59**: 145, 1945.

Freund, Jules, and Thomson, K. J.: Water in Oil Emulsions of Penicillin, *Science* **101**: 468 (May 4) 1945.

DIARRHEA AND TRICHOMONAS HOMINIS

To the Editor:—A woman aged 60, otherwise in good health, has had diarrhea of four months' duration. Several stool specimens, checked by a reliable pathologist, have been found to contain Trichomonas organisms. The patient lives on a farm, does some milking and helps care for farm animals. She has never had Trichomonas vaginitis. Please discuss the diagnosis and treatment. Antony Parsons, M.D., Valley, Neb.

ANSWER.—Trichomonas hominis is an intestinal flagellate which usually inhabits the lower part of the ileum and the cecum, where it is sometimes found in abundance. The organism is seldom seen in formed stools but is not infrequently present in diarrheal states, such as bacillary and amebic dysentery, as the fluid consistency of the stools in these conditions forms an excellent medium for the growth of the parasite. Since Trichomonas hominis is almost invariably found only in diarrheal states, some observers have considered the parasite an etiologic agent of diarrhea. Competent investigators, however, have observed little experimental or clinical evidence to support the claim that the organism, per se, is capable of initiating diarrhea.

According to Craig and Faust an animal reservoir of Trichomonas hominis is not known; birds, reptiles and fish harbor species belonging to the genus and some species are found in cattle, dogs, cats, rats and other animals.

In a determination of the etiologic factor or factors of the diarrhea of the patient in question, the following is suggested:

A complete physical examination should be performed, including vaginal examination and search for Trichomonas vaginalis. Routine studies of the blood and urine and x-ray examination of the stomach, colon and small intestine are indicated, as neoplasms of the gastrointestinal tract, regional enteritis and inflammatory lesions of the colon frequently are associated with diarrhea as a presenting symptom and may be disclosed only by x-ray. Proctosigmoidoscopy is of value in determining the presence of rectal disease and in differentiating various rectal lesions when present. Stool cultures and warm stool examinations are of value in demonstrating significant intestinal pathogens. If the stools are bulky or frothy, quantitative fecal fat determination may disclose steatorrhea. A basal metabolic rate determination may disclose a masked hyperthyroidism which may manifest itself by diarrhea. If these procedures fail to reveal any significant cause for the diarrhea, careful investigation of the patient's emotional problems, her fears and anxieties, should be determined, since tension and anxiety states not infrequently are manifested by gastrointestinal symptoms, including diarrhea.

A low residue bland diet may be instituted as trial therapy in conjunction with sedation such as phenobarbital ½ grain (30 mg.) and belladonna ⅛ grain (8 mg.) after meals and at bedtime. Added hours of rest are often of value. If no improvement is obtained after several weeks to a month with this regimen, repetition of the diagnostic procedures may be desirable, as a lesion sometimes not evident at a first examination may be disclosed later.

POSSIBLE LATE MUSTARD GAS KERATITIS

To the Editor:—In World War I a Canadian field gun received a direct hit from an enemy gas shell, sending most of its crew to the hospital with mustard gas burns. A new gun with a fresh crew was immediately wheeled into the same pit and many of these men also developed mustard gas vapor irritation. One soldier had swelling of the eyelids and an irritation of the scalp, which disappeared in a few weeks. In 1937 this man developed a right corneal ulcer, which did not entirely heal for several months, although he was not totally incapacitated during this time. The cornea remained cloudy with the vision reduced to about 20/100. In May 1946 there was a recurrence, and in June 1946 a 5 mm. ulcer was noted with surrounding corneal opacity and conjunctival and deep ciliary congestion. The pupil was free. Useful vision was not present. Although there was pain this was not as severe as expected. After treatment with atropine and heat for three weeks the ulcer healed almost entirely, but the cornea showed diffuse opacity and vascularization. There were residual photophobia, redness and pain. The possibility of a delayed mustard gas vapor burn was considered. Please discuss the etiology and treatment of this condition.

H. H. Sharp, M.D., Sussex, N. B., Canada.

ANSWER.—It is possible that the patient described in the query has recurrent corneal ulcers as a result of mustard gas burns acquired in World War I. However, a definite diagnosis cannot be made from the description given. Late mustard gas keratitis has been described by Duke-Elder in his Text Book of Ophthalmology and also recently by Mann and Pullinger. The characteristic picture of this condition is intense vascularization by new blood vessels into the cornea, springing from dilated and fusiform conjunctival loops, a tendency for the sclera to invade the cornea in places, lack of corneal sensitivity in the affected area, cholesterol crystals, fatty degeneration and what Mann calls "silkiness," defined as a dappling and fine short lines. The treatment is an unhappy one. Contact glasses offer the best prospect of relief from discomfort and breakdown of the cornea. The cholesterol crystals should be picked out of the cornea, as smooth a surface as possible being left. Obliteration of the limbal vessels by repeated cauterization sometimes helps.

References:

Duke-Elder, W. Stewart: Text-Book of Ophthalmology, St. Louis, C. V. Mosby Company, vol. 2, 1938, p. 1714.

Mann, Ida, and Pullinger, B. D.: A Study of Mustard Gas Lesions of the Eyes of Rabbits and Men, *Am. J. Ophth.* **26**: 1253 (Dec.) 1943.

TOXICITY OF METHYLENE DICHLORIDE AND METHYL CHLORIDE

To the Editor:—A patient has a contact dermatitis due to a refrigerant agent, methylene and methyl chloride. His friends state that all workers with this substance eventually have heart and kidney trouble. Please discuss the effects of these compounds.

C. C. Mansell, M.D., Lubbock, Texas.

ANSWER.—Neither methylene dichloride nor methyl chloride is important as a source of contact dermatitis. At the present time methylene dichloride is widely sponsored as the hydrocarbon of choice in hand metal cleaning because of its relatively low toxic and skin irritation properties. The chief objection is its skin chilling action, its boiling point being near 40 C. Likewise systemic damage is of low prospect. This is reflected in the fact that it has enjoyed limited use as a general anesthetic. Its narcotic action is much less (two and one-half times) than that of chloroform, but it produces an alarming excitatory period. In the concentration requisite to anesthesia prompt cyanosis, dyspnea, dilated pupils and tachycardia may occur. In animals high concentrations induce renal and hepatic damage.

The consensus as to industrial usage is that methylene dichloride (dichloromethane) is comparatively innocuous except from gross acute exposures. Three hundred parts per million may be tolerated for prolonged periods—this by contrast with carbon tetrachloride with its upper limit of safety near 50 parts per million.

Methyl chloride provides a greater risk. Apart from its acute narcotic action and danger from local freezing under some circumstances, methyl chloride is dangerous when taken into the body, owing to the fact that it readily decomposes with the formation of methyl alcohol (methanol, wood alcohol). Every gram of methyl chloride taken into the body provides 0.63 Gm. of methyl alcohol. Thus methyl chloride represents a potential cumulative poison as well as an acute narcotic. Numerous deaths have followed gross exposures in connection with refrigeration, chiefly from breaks in lines of multiunit systems. Such deaths were so prompt as to preclude any likely methyl alcohol action. Notwithstanding well recognized dangers from methyl chloride, as a practical danger it falls well below carbon tetrachloride. Regular exposure to 200 parts per million is probably tolerable.

References:

Browning: Toxicity of Industrial Organic Solvents, London, His Majesty's Stationery Office, 1937.
Henderson, Yandell, and Haggard, H. W.: Noxious Gases, New York, Reinhold Publishing Corporation, 1943.
McNally, W. D.: Toxicology, ed. 2, Beloit, Wis., Industrial Medicine, 1937.

PERIODIC SWELLING OF BREAST IN MEN

To the Editor:—What is the cause and treatment of unilateral periodic swelling of the breast of man? There is a definite visible swelling which occurs in the same breast every four to eight weeks in a man aged 46. A tumor is not palpable and there is no discharge of any kind from the nipple, spontaneously or on pressure. M.D., New York.

ANSWER.—The periodic swelling of the breast in the absence of a palpable tumor suggests the possibility that there may be some estrogenic stimulation of the breast. Sometimes under such a stimulation one breast enlarges with but little enlargement of the other. In some males with hypogonadism there may be a slight enlargement of one or both breasts, possibly as a result of a disturbance in the estrogen-androgen ratio. The fact that the swelling is periodic makes it desirable to search for a tumor which produces estrogenic material. This might be present in either a testis or an adrenal gland. It would be desirable to know whether or not any breast tissue is palpable and whether or not there has been any enlargement of the areola and nipple. Such changes would strongly suggest the likelihood of estrogenic stimulation.

EXCRETION OF SODIUM CHLORIDE IN URINE

To the Editor:—Please explain the value of measuring the total twenty-four hour excretion of sodium chloride in the urine. What is normal, and what do a low excretion and a high excretion indicate? What is the most satisfactory method of determining the total sodium chloride excretion for the general practitioner? M.D., Michigan.

ANSWER.—The determination of the twenty-four hour renal excretion of sodium chloride (chloride calculated as sodium chloride) is little used in the clinic at the present time. The normal adult range of sodium chloride excretion varies from 8 to 15 Gm., although values from 5 to 20 Gm. may be found, the average output being close to 10 Gm. per day. Normally this represents the salt intake of the previous twenty-four hours.

Low chloride excretion is generally associated with a hypochloremia, and a study of the plasma chloride and bicarbonate level is more useful as a rule than the quantitative determination of the urinary chloride excretion, although both determinations may be done. In pyloric obstruction and other conditions in which excessive vomiting occurs, the level of the plasma chloride may drop to the renal threshhold value, in which case urinary excretion of chloride practically ceases. Very low values are likewise encountered in pneumonia and other fevers; but, when the crisis has passed, the chloride excretion rapidly increases and for a short period may exceed the normal output. This is a favorable prognostic sign. In cardiorenal conditions both hyperchloremia and hypochloremia may occur, but the picture is so complicated that no generalizations regarding chloride excretion can safely be made. An excessive loss of chloride and sodium in the urine occurs in adrenal cortex insufficiency (Addison's disease) and a test for the diagnosis of this condition has been proposed on this basis.

A simple and sufficiently accurate method for the estimation of chloride in urine has been described by Samuel C. Harvey, The Quantitative Determination of the Chlorides in the Urine (*Arch. Int. Med.* 6:12 [July] 1910).

ORGANIZATIONS OF LARYNGECTOMIZED PATIENTS

To the Editor:—I understand that there is a "Lost Chord Society," membership in which is based solely on successfully undergoing a laryngectomy. Where are the headquarters of this society and who are its officers? Where can a patient who has had a laryngectomy receive information on artificial voice aids? M.D., California.

ANSWER.—The Lost Chord Society has not been identified. The "Anamilo Club" of New York, which was organized at the National Hospital for Speech Disorders, is composed of persons who have had their larynx removed. At the request of the attending surgeon a special committee of the club calls on patients who contemplate this type of operation. Artificial larynxes are manufactured by Otto Roberts, 705 Spivey Building, St. Louis, and by the Illinois Bell Telephone Company. Information can be obtained from Mrs. Tillie Brinkman, 505 West Belmont Avenue, Chicago.

ACTION OF DEHYDROCHOLIC ACID

To the Editor:—Is there anything that will dissolve gallstones clinically? What action has D-cholic acid on preformed stones? Willis P. Baker, M.D., Santa Ana, Calif.

ANSWER.—Nothing has been found that will dissolve gallstones clinically. Dehydrochloric acid (D-cholic) is a potent hydrocholeretic agent which will dilute bile by increasing its water content and volume. Dilution of the bile and frequent emptying of the gallbladder are measures which one might reasonably expect to reduce the likelihood of the formation of calculi under certain conditions. The use of bile salts and frequent fat feeding in the management of patients with biliary tract disease has been discussed recently:

Dolkart, Ralph E.: Medical Treatment of Biliary Tract Disease, *Illinois M. J.* 87:43 (Jan.) 1945.
Brown, Clarence F. G., and Dolkart, Ralph E.: Ketocholanic Acids in the Medical Management of Low Grade Gallbladder Disease, THE JOURNAL, Feb. 6, 1937, p. 458.

EFFECTS OF CHOLAGOGUES ON CORONARY OCCLUSION

To the Editor:—Would there be any harm if a cholagogue, such as "Depropanex," should be given to a patient with coronary thrombosis because of a mistaken diagnosis? Clifford W. Atherton, M.D., Stambaugh, Mich.

ANSWER.—Cholagogues in general will not have any deleterious effect on patients with coronary thrombosis. However, unless given in the event of a mistaken diagnosis, they should be avoided.

Depropanex is a deproteinated pancreatic extract free from insulin, histamine and acetylcholine. It relaxes muscle spasm and depresses sympathetic nervous system sensitivity. It is used chiefly in the treatment of intermittent claudication and to promote ureteral relaxation. It probably would not have any harmful effect on a patient with coronary occlusion.

INFLUENZA VACCINES

To the Editor:—Is there any evidence that one type of influenza virus vaccine is superior to another? I refer to the calcium phosphate absorbed type manufactured by Parke, Davis and Company and the regular or "Armed Services" type produced by Eli Lilly and Company. An industrial group is to be immunized and I wish to reassure it as to the potency of the preparation. M.D., Pennsylvania.

ANSWER.—There is little information as to the comparative prophylactic value in human beings of different preparations of influenza vaccine. All preparations are licensed by the National Institute of Health and presumably should meet the same requirements for potency as determined through laboratory tests.

ULCERATIVE STOMATITIS

To the Editor:—While it is obvious that exhaustive discussions are beyond the scope of a section such as Queries and Minor Notes, the treatment accorded the subject of ulcerative stomatitis and gingivitis (The Journal Nov. 2, 1946) seems inadequate. To confine this discussion to the fusospirochetal variety is like limiting consideration of respiratory infections to abscess of the lung. The fact is, of course, that there are many other ulcerative inflammations of the oral mucosae and gums. Perhaps more important to the general practitioner, these stomatitides are often caused by, and sometimes are the leading presenting symptoms of, blood dyscrasias, nutritional deficiencies, exanthems, dermatoses and poisonings. In the majority of these cases, positive smears of fusospirochetal organisms are nevertheless recovered. It is the responsibility of the practitioner to differentiate between those of local origin and those which signal systemic disorders. In the one instance it is good practice to refer the patient to the dentist, in the other to establish the correct diagnosis as a guide to appropriate treatment. Even allowing for the incomplete résumé, the prominent therapeutic roles of dental prophylaxis and penicillin in primary fusospirochetal infection should not have been omitted. Leo Stern, D.D.S., Chicago.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 133, No. 3 CHICAGO, ILLINOIS JANUARY 18, 1947

COPYRIGHT, 1947, BY AMERICAN MEDICAL ASSOCIATION

MULTIPLE MYELOMA

A Review of Eighty-Three Proved Cases

EDWIN D. BAYRD, M.D.
Fellow in Medicine, Mayo Foundation
and
FRANK J. HECK, M.D.
Rochester, Minn.

One hundred years ago, in November 1845, Sir James Watson sent a test tube of urine obtained from a 45 year old tradesman to Dr. Henry Bence-Jones with an accompanying note inquiring as to the nature of a strange substance present in that urine. This substance, then called "animal matter," has since become known as Bence-Jones protein.[1] MacIntyre[2] reported this case in 1850 in the *Medico-Chirurgical Transactions*.

Dalrymple[3] examined and described pathologically two ribs of an affected patient and reported the condition as mollities ossium in 1846. However, von Rustizky[4] is said to have been the first to describe the condition under the title "multiples myelom" in 1873, and Kahler[5] is credited with having associated this disease with the occurrence of Bence-Jones protein in the urine.

Since these early reports additions have been made to the literature steadily and at a somewhat increasing rate as the facilities for diagnosis and a greater knowledge of the unusual manifestations of this affliction have become more widespread. The most signal effort to systematize the present knowledge of this disease was that of Geschickter and Copeland[6] in 1928, when they reviewed all of the cases of proved multiple myeloma appearing in the literature up to that time and added 13 of their own to bring the total up to 425.

This present study deals with 83 cases of multiple myeloma in which the diagnosis has been verified by examination of pathologic material. The study includes all such cases seen at the Mayo Clinic through December 1945. Forty-nine cases were confirmed by means of sternal aspiration, 26 by biopsy and 8 by necropsy. Ten patients who had apparently solitary intramedullary tumors (not included in the 83 cases mentioned) were also seen, and the condition was verified by biopsy. These will be considered separately, not as indubitable instances of solitary myeloma, but as too uncertain of being multiple to be included in the general series. Eleven additional cases of extramedullary, oronasal myeloma were also noted, but with the exception of 1 case in which the myelomas later became multiple these will not be included, as they have been fully reported elsewhere.[7]

When this subject was last reported on from the clinic,[8] 32 cases of pathologically confirmed multiple myeloma had been observed. The present group of cases was drawn from more than 350 in which a diagnosis of multiple myeloma had been made on clinical grounds. In many of these, the evidence was almost indisputable but, unfortunately, pathologic material was lacking. Because of newer improvements in technic, most of the cases of proved multiple myeloma have been recent ones. Eighteen were seen in one period of six months during 1945.

CLINICAL MANIFESTATIONS

Pain.—All investigators to whose works we have had reference have observed that pain was the outstanding feature and frequently the sole symptom of which patients who had this disease complained. In this study it was present in 86 per cent of cases (fig. 3) at the time of first admission of the patients, which makes it the most constant finding by far. The two regions most often involved were the thorax and the lumbar spinal segment. Its onset frequently dated from some strain or slight trauma such as "the time I bumped my chest on the corner of the desk" or from "last January when I strained my back shoveling snow."

This pain was found as a rule to be steadily progressive, though with daily and weekly variations, only occasionally undergoing any prolonged remission which would have brought it into accord with Geschickter and Copeland's pain cycle.[6] Batts[9] was likewise unable to fit the majority of his patients into such a pattern.

On the few occasions when a remission did follow the initial onset of pain the pain usually was induced subsequent to trauma.

The pain that these patients experienced was almost always aggravated by exertion, coughing and sneezing and eased by rest. Many patients said that if they did not move they felt all right. Pain in the night was not common, contrasting with other malignant states.

Associated with this pain there was occasionally noted a striking, exquisite, yet superficial tenderness. The lightest palpation over the involved regions was sufficient to elicit an immediate and extremely sharp response from the patient. This tenderness was not found to be due to pathologic fractures, but local fragility of bone may have been a factor.

From the Division of Medicine, Mayo Clinic.

[1] Jones, H. B.: On a New Substance Occurring in the Urine of a Patient with Mollities Ossium, Phil. Tr., London **138**: 55-62, 1848.

[2] MacIntyre, W.: Case of Mollities and Fragilitas Ossium, Accompanied with Urine Strongly Charged with Animal Matter, Med.-Chir. Tr., London **33**: 211-232, 1850.

[3] Dalrymple, J.: On the Microscopic Character of Mollities Ossium, Dublin J. M. Sc. **2**: 85-95, 1846.

[4] von Rustizky, J.: Multiples Myelom, Deutsche Ztschr. f. Chir. **3**: 162-172, 1873.

[5] Kahler, O.: Zur [illegible] Myeloms: Beobachtung von Albumosuri [illegible] 3-45, 1889.

[6] Geschickter, C. F., [illegible] Myeloma, Arch. Surg. **16**: 807-863 (April) 1928.

[7] Figi, F. A.; Broders, A. C., and Havens, F. Z.: Plasma Cell Tumors of the Upper Part of the Respiratory Tract, Ann. Otol., Rhin. & Laryng. **54**: 283-297 (June) 1945.

[8] (*a*) Ghormley, R. K., and Pollock, G. A.: Multiple Myeloma, Surg., Gynec. & Obst. **69**: 648-655 (Nov.) 1939. (*b*) Ghormley, R. K.; Pollock, G. A.; Hall, B. E., and Beizer, L. H.: Multiple Myeloma, Surg., Gynec. & Obst. **74**: 242-244 (Feb.) 1942.

[9] Batts, M., Jr.: Multiple Myeloma: Review of Forty Cases, Arch. Surg. **39**: 807-823 (Nov.) 1939.

The characteristics of this pain alone, its location and progression and the rest, ease and freedom enjoyed by the patient at night, actually suggested the proper diagnosis to us clinically on one occasion. However, as a rule the clinical findings are entirely nonspecific.

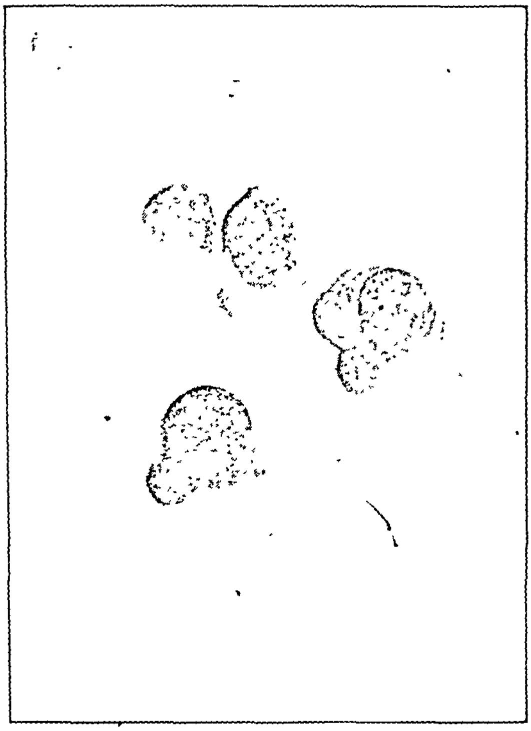


Fig. 1.—Smear of sternal marrow from same patient as in figure 4. Note contrast between the case illustrated in figures 1 and 4 and the case illustrated in figures 2 and 5. In the former case there were extreme destructive changes in the skeleton but the bone marrow showed much less change from normal than in figure 2; in the latter case the skeleton did not reveal any gross abnormalities but the bone marrow was characteristic of extremely malignant multiple myeloma.

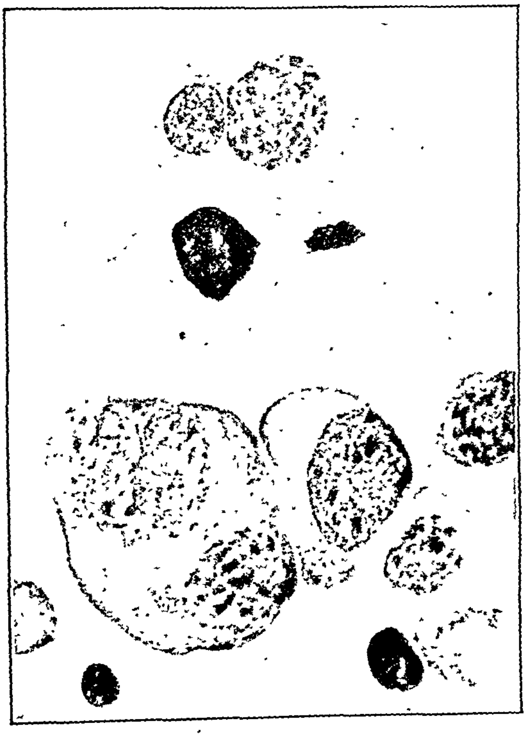


Fig. 2.—Smear of sternal marrow from same patient as in figure 5. The bone marrow was characteristic of extremely malignant multiple myeloma.

In 10 per cent of instances the pain had a rootlike distribution, often sciatic, and was usually found to be associated with compression of one or more vertebrae.

Fracture.—Pathologic fracture was encountered in a surprisingly small number of these cases (16 per cent), although occasionally evidence of old fracture of the ribs was present on roentgenologic examination of the thorax. When it was observed, the fracture usually involved the proximal third of the femur or the ribs, which is to be expected, since the disease primarily is one of the red bone marrow. These figures do not include compression, or "compression fractures" of the vertebrae.

Neurologic Manifestations.—Neurologic manifestations, such as root pain, as mentioned previously, and paraplegia, often a rather early development, were encountered in 12 cases (14 per cent). Once paralysis intervened, the outlook was definitely poor, although one of our patients lived for seven and a half years following laminectomy after the onset of paraplegia.

Bleeding.—Several writers have mentioned abnormal bleeding,[10] largely from the nose and gums. It is not as a rule associated with any defect in the clotting factors, except possibly of clot retraction. It is, however, almost invariably accompanied with a high concentration of serum globulin.[10h] In Schumacher's case the concentration of protein was 23.27 Gm. in 100 cc. of serum, and that of globulin was 16.02 Gm. Abnormal bleeding was observed in 6 instances in our series, and in 2 it was a distressing and most troublesome symptom, so much so that 1 of these patients received radium therapy locally in an endeavor to stop it. In all these cases the serum protein and serum globulin were appreciably increased, the lowest being 8.1 Gm. of protein in 100 cc. of serum and the highest, 14.1

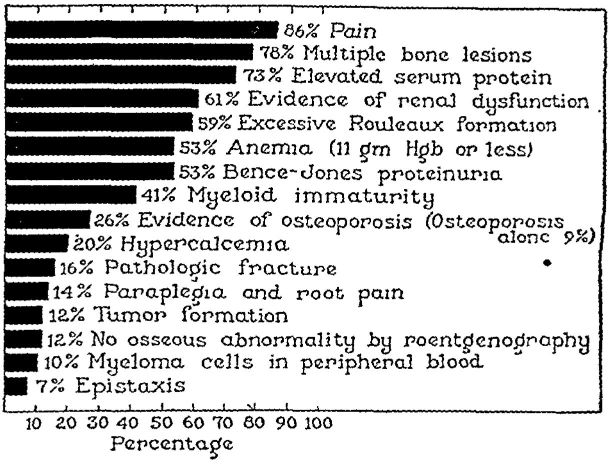


Fig. 3.—Percentage of occurrence of clinical and laboratory abnormalities in 83 cases of proved multiple myeloma.

---

[10] (*a*) Foord, A. G. [illegible] Renal Insufficiency and [illegible] Int. Med. **8**: 1071-1089 [illegible] F., Jr., and Bethea, J. [illegible] Myeloid Tissues: Plasmatocytomata and Their Relation to Multiple Myelomata, Am. J. M. Sc. **181**: 169-180 (Feb.) 1931. (*c*) Osgood, E. E., and Hunter, W. C.: Plasma Cell Leukemia, Folia haemat. **52**: 369-383 (Nov.) 1934. (*d*) Patek, A. J., Jr., and Castle, W. B.: Plasma Cell Leukemia: Consideration of Literature with Report of Case, Am. J. M. Sc. **191**: 788-793 (June) 1936. (*e*) Hertzog, A. J., and Schleicher, E.: Multiple Myeloma: Report of Three Cases, Minnesota Med. **27**: 1011-1013 (Dec.) 1944. (*f*) Schumacher, I. C.; Williams, O. O., and Coltrin, G. S.: Plasma Cell [illegible] California & West. Med. **47**: 174-177 [illegible] Multiple Myeloma, Arch. Int. Med. **61**: [illegible] (Nov.) [illegible] Ross, J. P.; Discombe, G., and Robb-Smith, A. H. T.: A Case of Multiple Myelomatosis, with Notes on the Value of Biochemistry in the Diagnosis of Bone Disease, St. Barth. Hosp. Rep. **70**: 221-246, 1937. (*i*) Foord, A. G., and Randall, L.: Hyperproteinemia, Autohemagglutination and Renal Insufficiency in Multiple Myeloma, Am. J. Clin. Path. **5**: 532-547 (Nov.) 1935.

Gm. No correlation with Bence-Jones protein could be obtained, however, as in 2 of the 5 cases the reaction for Bence-Jones protein was negative.

Formation of Tumor.—Formation of tumor was noted rather infrequently as compared to Batts's series, being found in only 10 cases, with a distribution as follows: clavicle, 3; skull, 2; humerus, 1; ribs, 2; sacrum, 1, and sternum, 1.

Pulmonary and Gastrointestinal Symptoms.—Pulmonary and gastrointestinal symptoms were no more frequent than one might have expected in a group of debilitated persons in this age range, and we were unable to develop any pattern of association such as suggested by previous authors.[6]

In 82 of the cases reported, roentgenograms were available. In 64 of these (78 per cent) multiple lesions were demonstrated. The whole skeleton was seldom roentgenographed, so that an attempt to indicate the relative frequency with which various regions were involved would be subject to obvious error. However, among 64 patients for whom multiple lesions were demonstrated on roentgenography, 58 had roentgenograms of the skull, of which 72 per cent were positive; 53 had roentgenograms of the thorax, 70 per cent of which showed such changes, and 51 had roentgenograms of the spinal column, 53 per cent of which showed the same discrete osteolytic regions.

As stated previously, pathologic fractures were noted in only 16 per cent of the patients in this series

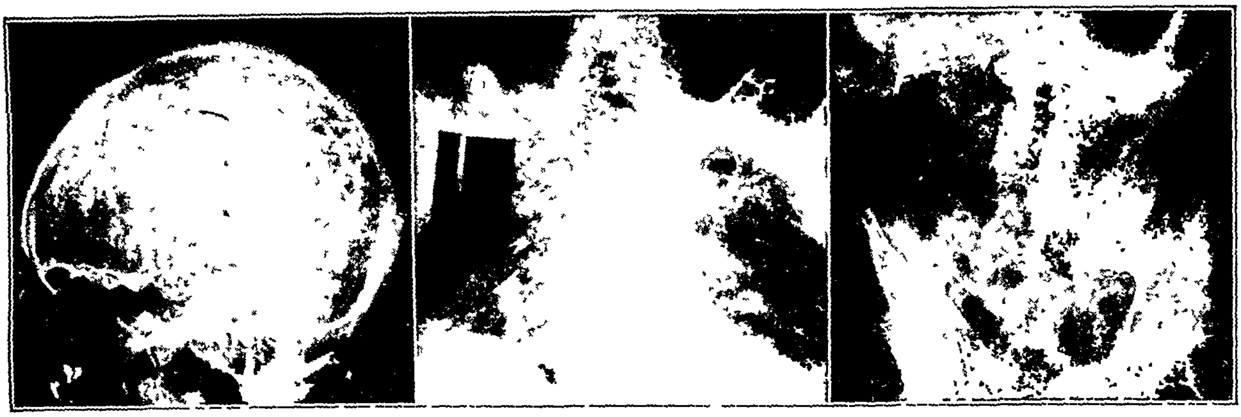


Fig 4.—Extreme destructive changes in the skeleton of a patient who had multiple myeloma

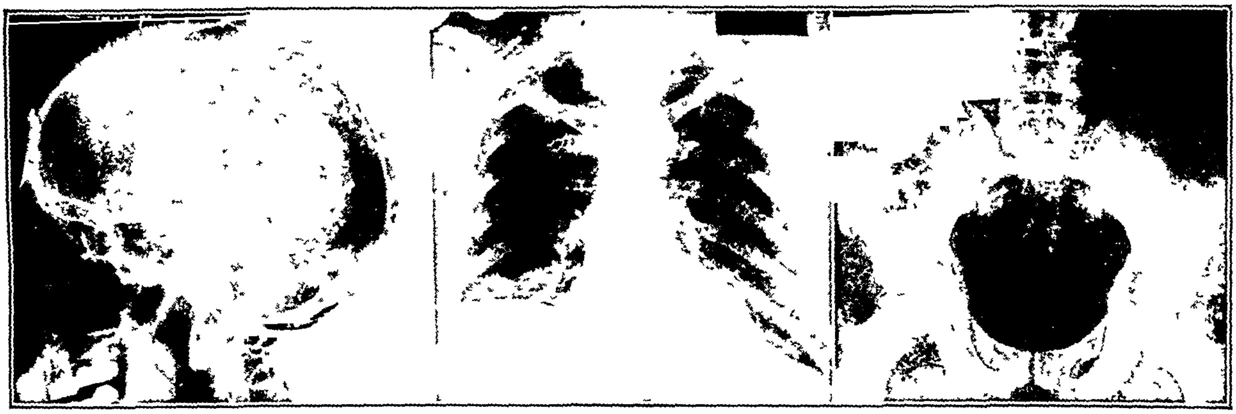


Fig 5.—Skeleton of a patient who had multiple myeloma There are no gross abnormalities

Age and Sex—The average and median ages of these persons were virtually the same, approximately 57 years, which agrees closely with the reports of others[11] There was an age span of 20 years on either side. The eldest was 78 and the youngest was 37 years of age. Men outnumbered women by about 3 to 1: men 76 per cent, women 24 per cent.

ROENTGENOGRAPHIC CHANGES

Discrete osteolytic regions in the skeleton of an adult man, especially when multiple, are almost always presumptive evidence of multiple myeloma. This is the so-called classical picture produced in the bones by this disease as it appears in the roentgenogram (figs 1 and 4). When it occurs, it should be substantiated by further appropriate diagnostic measures.

Other changes which occur with appreciable regularity are chiefly noted in the spinal column and include osteoporosis, compression of the vertebral bodies and ballooning of the intervertebral disks. These changes in themselves, of course, are not nearly so suggestive of multiple myeloma as the punched-out, osteolytic lesions, but in conjunction with an excessively high erythrocyte sedimentation rate, for example, their significance is notably enhanced.

These changes, usually found together, were noted in 21 cases, or 26 per cent of the whole group for which roentgenograms were available. In 7 cases (9 per cent) they constituted the only changes seen.

In 12 per cent of these cases, in the majority of which the serum proteins were elevated and inversion of the albumin-globulin ratio, excessive formation of rouleaux in smears of the peripheral blood and Bence-Jones proteinuria were present, no abnormalities of the osseous system whatsoever (figs. 2 and 5) were demonstrated by roentgenography (all roentgenograms included head, thorax and spinal column, and two thirds were complete). It should therefore be clear that multiple myeloma is not limited to those cases in which gross bony changes develop, and the diagnosis must in no instance be prejudiced by the absence of these changes.

---

[11] (a) Geschickter and Copeland[6] (b) Ross, Discombe and Robb Smith[10a] (c) Piney, A, and Riach, J S Multiple Myeloma: Aleukaemic and Leukaemic, Folia haemat. 46: 37 55, 1931

BENCE-JONES PROTEIN

Historically, Bence-Jones protein is the most significant of the clinical laboratory findings in cases of this disease, even though it is now known to be found in other conditions and is observed in only somewhat more than half of the cases of proved multiple myeloma. Perhaps this figure will drop even lower as clinical appreciation of this disease is otherwise stimulated. However, it is most suggestive when it does occur, and has been the focus of much interest.

TABLE 1—*Cases in Which Bence-Jones Protein Was Present Not Associated with Multiple Myeloma*

Case	Sex	Age, Yrs	Roentgenographic Changes	Protein, Gm in Each 100 Cc of Serum	Albumin-Globulin Ratio	Sedimentation Rate, Mm in 1 Hr	Diagnosis
1	M	72	In spine, femur	.	..	...	Chronic lymphatic leukemia
2	M	60	In skull	6 8	1 31	161	At necropsy: adenocarcinoma of stomach
3	F	63	None	8 2	1 15	106	Carcinoma of kidney, grade 4
4*	M	59			.		Inactive pulmonary tuberculosis, prostatitis

* In case 4 Bence Jones protein was present in 10 0 and in 10 9 This patient was living in 1941 There was no evidence of multiple myeloma.

TABLE 2—*Relation of Bence-Jones Proteinuria to Albuminuria and Serum Proteins*

	Albuminuria		Serum Protein		
Bence Jones Proteinuria	Absent	Present*	Elevated	Low or Normal	Total Cases
Present	8	32	18	0	40
Absent	23	13	16	2	36

* Albuminuria, grade 2 or more (on the basis of 1 to 4), with or without casts and red blood cells

The evidence at hand seems to favor the conclusion that Bence-Jones protein is an extremely small globulin, or group of small globulins, with a molecular weight of approximately 30,000. Its small size may well account for its frequent occurrence in the urine as contrasted with the rarity with which it has been noted in the blood

Coley[12] found Bence-Jones protein in "about 8 per cent of all cases." His personal series included 16 cases. Batts[9] found it in 50 per cent; Ghormley and Pollock,[8a] reporting from the Mayo Clinic in 1939, found it in 35 per cent of proved cases, 51 per cent of their whole series. Geschickter and Copeland[6] in their review of 425 proved cases, including 13 of their own, noted an incidence of 65 per cent.

Bence-Jones protein has been reported[13] as occurring in the following conditions other than multiple myeloma: metastatic carcinoma of the bone, multiple sarcoma of the bone, senile osteomalacia, fibrocystic disease, comminuted fracture, tumor of the jaws, lymphatic leukemia, *myelogenous leukemia and polycythemia.* We have encountered it, unassociated with multiple myeloma, in the instances shown in table 1.

The nature of Bence-Jones protein and its mode and site of production have been the source of much speculation and investigation.

In a most extensive work on the subject Hopkins and Savory,[14] in 1911, found that Bence-Jones protein contains all the amino acids characteristic of a typical protein and is characterized by a high proportion of the aromatic groupings. They found it to have less power as an antigen than serum proteins and to contain less histidine than did globin. In their opinion it seemed to stand alone in respect to its chemical composition as well as its physicochemical properties. They suggested that it might be the result of an incomplete metabolism as well as an abnormal one, but that it was of endogenous origin.

Wintrobe and Buell,[15] *on the other hand, expressed* the belief that it is erroneous to conclude that temperatures of precipitation and solution of the protein are physicochemical constants, and stated that they are influenced by the concentration of the protein, p_H and presence of other compounds such as urea In their opinion, Bence-Jones protein is a "class" of substances. Yet they acknowledged that it had been isolated as a chemical individual in certain cases in which spontaneous crystallization had occurred on standing.

Bayne-Jones and Wilson[16] found Bence-Jones protein to be immunologically distinct from proteins of normal human serum.

Bence-Jones proteinuria appeared in 40 (53 per cent) of 76 cases in which the urine was tested. When this condition was present, it usually remained so, but this was not constant, and has been emphasized by many others.

Table 2 summarizes the relationship of Bence-Jones proteinuria to the serum proteins and albuminuria

PERIPHERAL BLOOD

Morissette and Watkins[17] have reviewed this aspect of the disease rather extensively in an investigation of 100 blood smears which, because of "greasiness"[18] or other reasons, were suspected of coming from patients who had multiple myeloma Fifty-six cases were found in which the diagnosis of multiple myeloma was the most acceptable from clinical and laboratory studies (in only 19 of these was the diagnosis pathologically confirmed). The significant hematologic findings in these 56 were (1) anemia, (2) excessive formation of rouleaux, (3) immaturity of both erythrocytes and leukocytes, (4) lymphocytosis, (5) eosinophilia and (6) presence of myeloma cells and atypical plasma cells

Anemia.—Anemia has been repeatedly noted as one of the important, frequently occurring features of multiple myeloma and has been ascribed to (1) bone marrow replacement, (2) toxic inhibition and (3) renal failure. None of these has been an entirely satisfactory explanation. But in any event the response to the usual therapeutic measures is generally disappointing.

---

[12] Coley, W B Multiple Myeloma, Ann Surg 93:77-89 (Jan) 1931.

[13] (*a*) Geschickter and Copeland[6] (*b*) Ross, Discombe and Robb Smith[10] (*c*) Boggs, T. R, and Guthrie, C G The Bence Jones Proteinuria in Conditions Other than Myelomatosis: An Instance Associated with Metastatic Carcinoma, Bull. Johns Hopkins Hosp 23:353 356 (Dec) 1912.

[14] Hopkins, F. G, and Savory, H A Study of Bence Jones Protein and of the Metabolism in Three Cases of Bence Jones Proteinuria, J. Physiol 42:189 250 (March) 1911.

[15] Wintrobe, M. M, and Buell, M. V.: Hyperproteinemia Associated with Multiple Myeloma, with Report of Case in Which Extraordinary ssociated with Thrombosis of Retinal Veins and aynaud's Disease, Bull Johns Hopkins Hosp

d Wilson, D W.. Immunological Reactions of Bence Jones Proteins I Differences Between Bence Jones Proteins and Human Serum Proteins, Bull. Johns Hopkins Hosp 33:37-43 (Feb) 1922

[17] Morissette, L, and Watkins, C. H: Multiple Myeloma: Diagnostic Value of the Blood Smear, Proc Staff Meet, Mayo Clin. 17:433 440 (July) 1942.

[18] A smear of the peripheral blood was referred to as "greasy" if it appeared as though it had been made on a dirty or an oily slide

In this group anemia was common, 53 per cent of the patients having hemoglobin values, by the photelometer method, of less than 11 Gm. per hundred cubic centimeters of blood. Fifty-six per cent of the patients had an erythrocyte count of less than 4,000,000 per cubic millimeter of blood, and 25 per cent had an erythrocyte count of less than 3,000,000 per cubic millimeter. It will be noted, however, that the counts alone are as a rule worth little except as unexplained anemia may provoke further study.

Excessive Formation of Rouleaux.—Excessive formation of rouleaux in cases of multiple myeloma was first stressed by Reimann,[19] although he cited Hewson as having commented on abnormal formation of rouleaux in 1797. Many others have noted it since.

Considered as causes of this phenomenon are slow drying, presence of a hydrophilic colloid (acacia) and increased globulin with a reversal of the albumin-globulin ratio.

Frequently associated with formation of rouleaux is autohemagglutination,[20] which may appear in the red cell counting chamber, is associated with an elevated erythrocyte sedimentation rate and may make cross matching or typing impossible. Snapper[21] suggested carrying on this reaction in an incubator at 28 C. to overcome this tendency.

Excessive formation of rouleaux was noted in 38 of 63 cases (60 per cent) in which examinations of the peripheral blood were made. An extremely close correlation with increased serum globulin and an elevated erythrocyte sedimentation rate was noted. In no instance was increased formation of rouleaux noted in the presence of normal serum globulins, or normal serum protein levels, although it was not mentioned in 4 cases in which the proteins were elevated.

A corollary to formation of rouleaux is an elevation of the erythrocyte sedimentation rate to surprising heights. Our highest uncorrected rate was 176 mm. in one hour by the method of Westergren.

In 45 cases determinations of both the total serum protein and the erythrocyte sedimentation rate were made. In 36 of these there was an increased serum protein (more than 8.0 Gm. per hundred cubic centimeters), and in all but 1 there was a notably increased sedimentation rate, of 100 mm. or more in an hour (Westergren method, not corrected). In that 1 case the serum protein was 10.2 Gm. per hundred cubic centimeters, the albumin-globulin ratio 1:1.6 and the erythrocyte sedimentation rate 35. Of the 9 cases in which the serum protein was normal, in all but 2 there was an erythrocyte sedimentation rate of less than 58 mm. in an hour, and in only 3 of those did it exceed 28 mm. in an hour. Of the 2 mentioned, in 1 there was a sedimentation rate of 107 mm., with a serum protein of 7.8 Gm. per hundred cubic centimeters and an albumin-globulin ratio of 1.5:1.0, and in the other there was a sedimentation rate of 72 mm., with a serum protein of 6.5 Gm. and an albumin-globulin ratio of 3.5:1.0.

Leukocyte Count.—The leukocyte count is usually normal or somewhat low. In 80 per cent of our series it was less than 10,000 per cubic millimeter of blood, and in a third of the 80 per cent it was less than 5,000. However, a leukemoid reaction is fairly common, and on occasions it may be extreme, leading to rather high counts. Barr[22] reported a case in which there was a leukocyte count of 21,000. In Rosenthal and Vogel's[23] case (number 13) the leukocyte count was 48,000. Foord and Randall[10f] reported a case proved by necropsy (number 1) in which there was 18.37 Gm. of protein per hundred cubic centimeters and the leukocyte count was 131,000 terminally with 2 per cent leukoblasts and stem cells, 12 per cent myelocytes and 31 per cent eosinophils.

Morissette and Watkins[17] noted that eosinophilia was occasionally encountered in cases of multiple myeloma, as was lymphocytosis. In this series, however, only 1 case was noted in which significant eosinophilia had been recorded. Leukocytes numbered 6,800 in each cubic millimeter of blood, and 45 per cent of them were eosinophils. Lymphocytosis in these cases was never more than moderate and by no means constant.

Myeloid Immaturity.—Myeloid immaturity as far back as the stem cell was observed with notable frequency. In 41 per cent of 63 cases in which smears of the peripheral blood were submitted for study there was myeloid immaturity to the myelocyte at least. In 20 per cent stem cells were also seen.

Myeloma Cells.—Since Foa,[24] in 1904, and Schridde, who first observed myeloma cells or atypical plasma cells in a case of Aschoff's[25] in 1906, many observers[26] have described them in the peripheral blood stream in cases of multiple myeloma (fig. 6). This may reach the extreme that it did in 1934 in the case of a 49 year old man in which Osgood and Hunter[10c] found 45 to 54 per cent of "plasma cells." This man's spleen was palpable, and he had a leukocyte count ranging from 15,700 to 34,050 per cubic millimeter of blood. His serum protein was elevated to 8.79 Gm. per hundred cubic centimeters, and his albumin-globulin ratio was materially reversed. He had an erythrocyte sedimentation rate of 95 mm. in fifteen minutes, but had no Bence-Jones proteinuria, and only finely granular regions of decalcification in his skull were observed by roentgenologic examination. At necropsy the plasma cells made up 50 per cent of the cellular elements of the bone marrow and showed prominent nucleoli.

Osgood and Hunter considered this to be a true instance of plasma cell leukemia and not multiple myeloma with myeloma cells in the peripheral blood. They held splenomegaly, epistaxis, bleeding from the gums and the clinical course which this patient pursued to be of the type characteristic of leukemia. As further evidence they cited the lack of Bence-Jones proteinuria, of "typical" defects of the bone in the roentgenograms, bone pain and bone fragility. Others have felt that this is a distinction of degree only, not of kind. With this we would concur.

---

[19] Reimann, H. A.: Hyperproteinemia as a Cause of Autohemagglutination: Observations in a Case of Myeloma, J. A. M. A. **99**: 1411-1414 (Oct. 22) 1932.

[20] (*a*) Ghormley, Pollock, Hall and Beizer.[8b] (*b*) Morissette and Watkins.[17] (*c*) *Reimann.*[19] (*d*) *Stewart, A., and Weber, F. P.:* Myelomatosis, Quart. J. Med. **7**: 211-227 (April) 1938. (*e*) Beizer, L. H.; Hall, B. E., and Giffin, H. Z.: The Diagnosis of Multiple Myeloma by Sternal Aspiration, Am. J. M. Sc. **203**: 829-836 (June) 1942.

[21] Snapper, I.: Medical Clinics on Bone Diseases: A Text and Atlas, New York, Interscience Publishers, Inc., 1943, pp. 181-211.

[22] Barr, D. P.: Multiple Myeloma, Ann. Int. Med. **1**: 884-889 (May) 1928.

[23] Rosenthal, N., and Vogel, P.: Value of the Sternal Puncture in the Diagnosis of Multiple Myeloma, J. Mt. Sinai Hosp. **4**: 1001-1019 (March-April) 1938.

[24] Foa, P., cited by Meyer, Halpern and Ogden.[29]

[25] Aschoff, L.: Ein Fall von Myeloma, München. med. Wchnschr. **53**: 337, 1906.

[26] (*a*) Jackson, Parker and Bethea.[10b] (*b*) Osgood and Hunter.[10c] (*c*) Piney and Riach.[11c] (*d*) Beck, H. G., and McCleary, S.: Multiple Myeloma with Bone Marrow Plasma Cells in the Blood: Report of Case, J. A. M. A. **72**: 480-482 (Feb. 15) 1919. (*e*) Multiple Myeloma, Cabot Case 21012, New England J. Med. **212**: 28-30 (Jan. 3) 1935. (*f*) Piney, A.: Plasma Cell Leukemia, Folia haemat. **30**: 174-182 (Aug.) 1924. (*g*) Ghon, A., and Roman, B.: Ueber pseudoleukämische und leukämische Plasmazellen-Hyperplasie, Folia haemat. **15**: 72-122, 1913. (*h*) Muller, G. L., and McNaughton, E.: Multiple Myeloma (Plasmatocytomata) with Blood Picture of Plasma Cell Leukemia: Report of Two Cases, Folia haemat. **46**: 17-25 (Dec.) 1931. (*i*) Morissette and Watkins.[17]

Significant splenomegaly has been noted in cases of typical multiple myeloma,[27] as has hemorrhage, and it should be apparent from the cases reported herein as well as from the reports of others that the absence of Bence-Jones proteinuria and of findings referable to the osseous system is far from conclusive.

Moreover, Osgood and Hunter themselves took note of the transitional cases between their own and the usual multiple myeloma with myeloma cells in the peripheral blood.

In 1937 Reiter and Freeman[28] reported the case of a woman, 66 years of age, in which there were 72 to 74 per cent of plasma cells in the hepatic and pancreatic vessels at necropsy. During life the patient had manifested weakness, had been treated for pernicious anemia and had not had any roentgenographic studies of her skeleton.

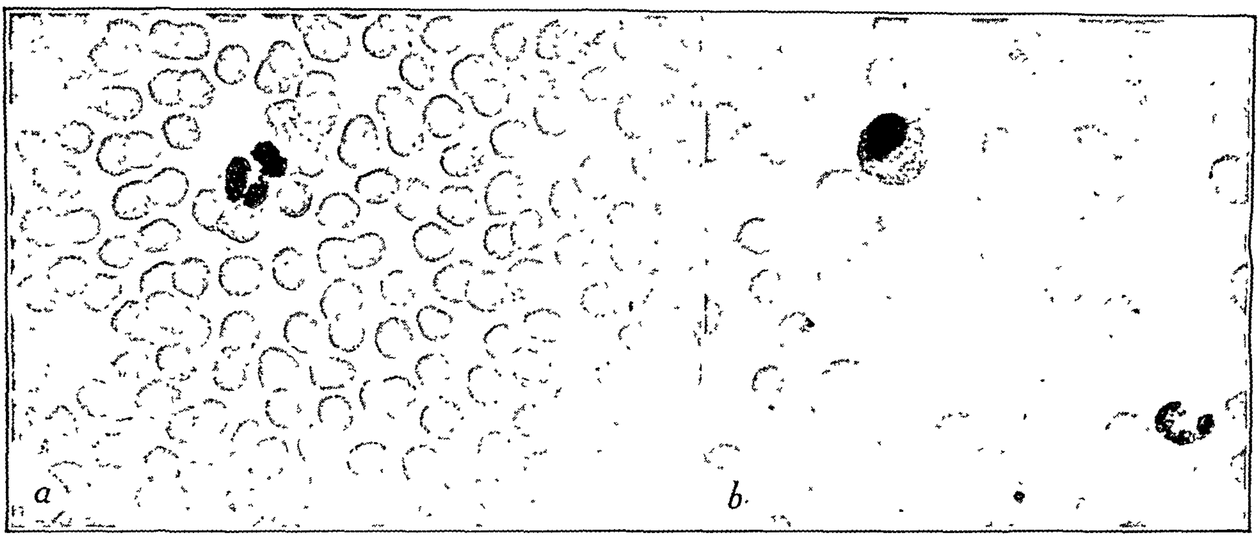


Fig. 6—Smears of the peripheral blood. (a) Normal blood; (b) blood in a case of multiple myeloma exhibiting excessive formation of rouleaux and a myeloma cell (upper left).

Recently Meyer, Halpern and Ogden[29] reviewed all the known cases of multiple myeloma in which there were plasma cells in the peripheral blood and all the purported cases of plasma cell leukemia, of which they listed 4. In a careful consideration of these cases they expressed doubt that any were actually cases of true plasma cell leukemia. They rejected these cases largely on the ground that the absence of osseous lesions had not been adequately established.

They then presented data on a case of their own of "acute plasma cell leukemia" with hemorrhage and purpura, the patient being a 67 year old woman. There were 11,000 to 31,000 leukocytes per cubic millimeter of blood containing up to 44 per cent "plasma cells," 11 Gm. of total serum protein per hundred cubic centimeters and an inverted albumin-globulin ratio. There was no Bence-Jones proteinuria, and the "complete" skeletal roentgenograms demonstrated "no abnormal bone changes." The spleen, liver, lymph nodes and bone marrow were found to be extensively involved at necropsy. Here stress was laid on the absence of tumors of the bone and Bence-Jones proteins as being evidence against multiple myeloma, whereas the bleeding, the visceral involvement and the clinical course were noted as being characteristic of leukemia. The elevated serum protein was discounted as not diagnostic of multiple myeloma.

Because of this Meyer, Halpern and Ogden expressed the belief that their case justified the designation of acute plasma cell leukemia, although they considered it to "complete the chain in the analogy to lymphoid tumors" such as lymphoma and lymphatic leukemia.

However, since we know that otherwise typical multiple myelomas may occur without discrete bony lesions, without Bence-Jones proteinuria, or with splenic and nodal involvement,[30] with bleeding and purpura and with a high percentage of plasma or myeloma cells in the peripheral blood, we cannot feel that this case represents anything other than the leukemic phase of multiple myeloma. It is not clear that any useful purpose is served by creating the impression that "plasma cell leukemia" is a separate entity.

Morissette and Watkins found atypical plasma cells and myeloma cells in 41 of the 56 cases of multiple myeloma which they studied (73 per cent). In the present series no special effort was made to review the blood smears for myeloma cells. As they were reported by the initial examiner they occurred in only 10 per cent of cases.

One of these patients had 7.5 per cent myeloma cells in his peripheral blood, and another (to be reported on in greater detail separately) with the clinical picture of leukemia had 41.5 to 48 per cent myeloma cells in his peripheral blood.

Of the other observations on the peripheral blood one has been mentioned in connection with the bleeding tendency that some of these patients have, namely, poor clot retraction. This has been observed occasionally among the patients of the present study.

---

27. Lowenhaupt, E.: Proliferative Lesions in Multiple Myeloma with Special Reference to Those of the Spleen, Am. J. Path. **21**: 171-185 (Jan.) 1945.

28. Reiter, B. R., and Freeman, J. T.: Plasma Cell Leukemia, Am. J. M. Sc. **193**: 38-42 (Jan.) 1937.

29. Meyer, L. M.; Halpern, J., and Ogden, F. N.: Acute Plasma Cell Leukemia, Ann. Int. Med. **22**: 585-598 (April) 1945.

30. Ghormley and Pollock.[6a] Jackson, Parker and Bethea.[10b] Barr.[22] Lowenhaupt.[27]

Rosenthal and Vogel[23] noted thrombopenia in 5 of their 13 cases. We have not observed it with any appreciable frequency, but it should be looked for.

It is also of interest to note that on one, two or three occasions a robin's egg blue background has been observed in the blood smear when stained by the usual method with Wright's stain. These have all been associated with unusually high globulins, but the blue background and the concentration of globulins do not appear to bear a strictly quantitative relationship.

PROTEINS

Ellinger[31] is said to have reported abnormal serum proteins first in cases of this disease in 1899. Feller and Fowler[32] listed 52 cases of elevated serum protein in multiple myeloma as collected through 1936 and noted that most of them had appeared since 1928. By 1937 the number had risen to 60,[33] and Jeghers and Selesnick[34] had concluded that hyperproteinemia occurred in between 50 and 60 per cent of cases of multiple myeloma.

Causes of hyperproteinemia, which almost always mea [illegible] as observed by several authors,[35] are

The reason for this increased serum protein level in cases of multiple myeloma is not known, although the bone marrow and the liver have both been implicated. In 1 of our cases the myeloma cells in the bone marrow peculiarly resembled reticulum cells involved in a storage disease.

The only unusual observation with respect to the spinal fluid of which we are cognizant is that reported in the Cabot case, number 20031,[36] in which the gold sol curve was 5555555554 and the protein was 95 mg. per hundred cubic centimeters.

Precipitation of this protein by Hayem's solution[37] and by cold[15] has been noted occasionally. The relationship between the elevated serum globulin, formation of rouleaux and an increased sedimentation rate has been mentioned.

Of the 83 cases in this series estimations of total serum protein were made in 55 cases. In 40 of these (73 per cent) the concentration of protein was elevated above a level of 8.0 Gm. per hundred cubic centimeters. In all but 3 of these there was a reversal of the albumin-globulin ratio. The highest serum protein value obtained was 14.1 Gm. per hundred cubic centimeters, with an albumin-globulin ratio of 1:3.3. The most disproportionate ratio (1:6.7) occurred with a serum protein of 11.8 Gm.

In 40 cases in which the concentration of protein in the serum was elevated there were multiple roentgenographic changes in 73 per cent, osteoporosis in 15 per cent and no roentgenographic changes in 12 per cent. The concentration of hemoglobin was less than 13.5 Gm. in 100 cc. of blood in all cases and less than 11 Gm. in 90 per cent of cases. Bence-Jones proteinuria was present in 56 per cent of cases. The sedimentation rate (Westergren method) was 100 mm. or more in one hour in 97 per cent of the 40 cases.

CALCIUM

In 1936 Gutman and his co-workers[38] reviewed the cases of multiple myeloma in the literature in which determinations of blood calcium had been made. Seventy-two cases were found at that time, and to these they added 6 of their own. The calcium values as recorded were elevated (more than 12 mg. per hundred cubic centimeters) or said to be elevated in 34 instances (44 per cent). The highest value was 20.0 mg. per hundred cubic centimeters. In 4 of their 6 cases the levels were elevated.

As a rule the serum phosphorus is normal or slightly elevated and the phosphatase is normal or somewhat increased. Two different authors reported serum phosphorus values of 6.8 mg. per hundred cubic centimeters.

Table 3.—*Causes of Hyperproteinemia*

Cause	Frequency of Hyper-proteinemia	Protein, Gm. in Each 100 Cc of Serum	Author
Kala azar	....	10 54	Wu
Syphilis	....	9.37	Wu
Renal carcinoma	.. .	.....	Peters and Eisenman
Lymphosarcoma	..	.....	Feller and Fowler
Schistosomiasis	50%	8 to 10	Meleney and Wu
Leprosy (32 cases)	80%	Over 8	Frazier and Wu
Cirrhosis	. .	11.46	Snapper
Chronic nephritis	....	9 14	Snapper
Lymphogranuloma venereum	62 of 67 cases	Over 8	Kagan
Dehydration	....	.....	Kagan
Monocytic leukemia		. . .	Kagan
Boeck's sarcoid		. .	Kagan

Table 4.—*Data for Cases in Which Serum Calcium Was Greater than Normal*

Case	Calcium, Mg in Each 100 Cc of Serum	Phosphorus, Mg in Each 100 Cc. of Serum	Phosphatase, Bodansky Units	Protein, Gm in Each 100 Cc. of Serum
1	13 8	2 9	...	....
2	12.2	3 0	...	7.7
3	15 6	3 8	0 9	13.5
4	12 5	3 6	2 4	11 4
5	15 7	6 6	..	8 1
6	15 9	4 0	...	6 4
7	12 7	2 9	1.9	9.5
8	12 9	6 0	2.2	6 5

In our series determinations of serum calcium were obtained in 41 instances, of serum phosphorus in 36 cases and of alkaline phosphatase (Bodansky) in 24 cases. In only 8 instances did the serum calcium exceed 12.0 mg. per hundred cubic centimeters in this group (20 per cent). The highest values were 15.6, 15.7 and 15.9 mg. per hundred cubic centimeters.

The serum phosphorus averaged 3.41 mg. per hundred cubic centimeters, ranging from 0.8 to 14.3 mg. per hundred cubic centimeters. Twenty-eight of the 36 estimations were between 0.8 and 4.2 mg. per hundred cubic centimeters.

The alkaline phosphatase ranged between 0.8 and 12.3 units (Bodansky) and averaged 3.02 units. Twenty-one of the twenty-four determinations were found to be within 0.8 and 3.6 units and averaged 2.13 units.

---

[31] Ellinger, A, cited by Wintrobe and Buell[15]

[32] Feller, A L, and Fowler, W. M. Hyperproteinemia in Multiple Myeloma, J Lab & Clin Med. **23:** 369 378 (Jan.) 1938.

[33] Atkinson, F R B. Multiple Myelomata, M. Press **195:** 312 (Oct 6), 327 (Oct 13) 1937.

[34] Jeghers, H, and Selesnick, S.: Hyperproteinemia: Its Significance, Internat Clin **3:** 248 279 (Sept.) 1937.

[35] (*a*) Snapper.[21] (*b*) Feller and Fowler.[32] (*c*) Jeghers and Selesnick[34] (*d*) Peters, J P, and Eisenman, A. J: The Serum Proteins in Diseases Not Primarily Affecting the Cardiovascular System or Kidneys, Am J M Sc **186:** 808 833 (Dec) 1933. (*e*) Kagan, B. M Hyperglobulinemia, Am J. M. Sc **206:** 309-315 (Sept) 1943. (*f*) Meleney, H. E, and Wu, H.. The Blood Serum Globulin in Schistosomiasis Japonica, China M J. **38:** 357 361 (May) 1924 (*g*) Wu, H. A New Colorimetric Method for the Determination of Plasma Proteins, J. Biol Chem **51:** 33 39 (March) 1922

[36] Multiple Plasma Cell Myeloma Involving Sternum, Brain, Skull and Kidney, Cabot Case 20031, New England J. Med. **210:** 154 158 (Jan 18) 1934.

[37] Feller and Fowler.[32] Jacobson, B. M.: On a Peculiar Serum Protein Precipitated by Hayem's Solution Occurring in Multiple Myeloma. Proc. Soc. Exper. Biol. & Med **32:** 1257-1258 (May) 1935.

[38] Gutman, A. B.; Tyson, T. L, and Gutman, E B: Serum Calcium, Inorganic Phosphorus and Phosphatase Activity in Hyperparathyroidism, Paget's Disease, Multiple Myeloma and Neoplastic Disease of the Bones, Arch Int Med **57:** 379 413 (Feb) 1936

When those cases are listed in which the serum calcium was found to be elevated (table 4), it will be seen that the values for serum phosphorus were either normal or slightly elevated and that the phosphatase activity, when noted, was normal to low. It will also be noted from table 4 that no apparent correlation exists between the serum calcium level and that of the serum protein.

RENAL COMPLICATIONS

Many patients who have multiple myeloma are first given a diagnosis of nephritis, and many more patients manifest renal impairment at some stage of their disease. In some cases uremia is the terminal event. The presenting complaint may be that "my urine is loaded with albumin."

In Bell's review of the subject in 1933[39] he stated that the only direct effect of multiple myeloma on the kidneys was obstructive, owing to tubular casts of Bence-Jones protein and atrophy. He expressed the opinion that Bence-Jones proteinuria per se does not have an injurious effect on either the glomerulus or the tubule. Others have noted this same lesion, which has been called "intranephritic hydronephrosis."[26e]

In those cases in which Bence-Jones proteins did not seem to be incriminated, Bell felt that renal failure could be explained on another basis than multiple myeloma.

In 5 of our cases albuminuria was the outstanding symptom on admission. Of the few patients that have died while still here, uremia was a part of the terminal episode in 3 instances.

Fifty-one patients in this group (61 per cent) exhibited varying degrees of renal impairment as evidenced by albuminuria (grade 2 or more on a basis of 1 to 4) with or without casts, red blood cells or an elevated blood urea. A third of these patients had albuminuria alone.

SOLITARY MYELOMAS

In the 10 cases represented in this group of solitary myelomas, the myelomas are not unequivocally solitary, but they are doubtfully multiple, and because these lesions tend to bear a somewhat better prognosis than the multiple ones they have been reviewed separately. Another group of 11 cases of solitary myelomas involving the oronasal cavities have recently been reported elsewhere.[7]

However, this separation of multiple and solitary myelomas is to some degree artificial because they are probably all a phase in the same disease in which the plasma cell leukemias represent one extreme and the solitary myelomas the other. Furthermore, "solitary myeloma" is frequently an inexact designation, since a single lesion determined by roentgenography, even when a sternal aspiration has been negative in result, is not complete assurance of a solitary process.

Tennent,[40] in a review of 49 solitary myelomas of bone which he found in the literature, stated that 30 per cent of them became generalized. This is somewhat at variance with the opinion expressed[41] that this form of myeloma is benign. Likewise Figi, Broders and Havens[7] have emphasized the malignant character of the extramedullary myelomas which they reported.

In King's case[42] of a solitary intraosseous lesion, multiple myeloma manifested itself four years later. Jackson and Parker[10b] reported a case (number 1) of an extramedullary myeloma which became generalized ten years after the patient's initial biopsy.

In Geschickter's case[43] of a solitary myeloma, demonstrated in the left hip by roentgenography, the patient pursued a progressive downhill course regardless of the fact that no generalized disease could be demonstrated.

Cutler and others[44] collected reports of 12 cases of solitary intraosseous myeloma from the literature and 5 from the bone registry, and added 1 of their own. Of the 5 patients having Bence-Jones proteinuria, 4 showed a generalized spread within two months to four years thereafter. Of those without Bence-Jones proteinuria, 1 was alive and apparently well four years later, 1 nine years later and 1 ten years.

Pasternack and Waugh[45] reported a case in which the patient was alive and without a generalized spread of the disease after seven and a half years.

In 1943, Hellwig[46] collected the cases of extramedullary plasma cell tumors from the literature and added 1 of his own for a total of 128 cases. Of the cases that he collected 47 were conjunctival, benign and probably inflammatory. Four were nodal. Two of these were associated with typical multiple myeloma and 1 with other involved viscera. Thirteen involved other organs. Sixty-three were in the air passages. These Hellwig divided into five groups. Group 1 included 26 patients who had single tumors which were felt to be "noncancerous." None of the patients had Bence-Jones proteinuria and none of the tumors was known to have become generalized. The nine tumors in group 2 were "noncancerous and multiple." Three of 7 recurred. The tumors in group 3 were "cancerous without metastasis." Of the 10 patients most died within a year. One was alive after twelve years. In group 4 there were 9 patients, with tumors "cancerous with metastases in nodes." All patients died shortly thereafter. In group 5 there were 9 patients, with tumors "cancerous with metastases to bone." All patients died, but over a period of twelve years. Bence-Jones protein appeared with involvement of bone.

> In 1 of the cases of oronasal myeloma reported by Figi, Broders and Havens[7] from the Mayo Clinic in June 1945, the patient was a man of 60 years of age who came to the clinic in July 1934, complaining of a choking sensation in his throat. A myeloma measuring 4 by 3 by 2 cm. and involving the right tonsil was removed, and two courses of roentgen therapy were administered. His urine did not show evidence of Bence-Jones protein.
>
> In June, 1942, the patient returned with a six weeks' history of pain in his sternum and ribs anteriorly, and of a loss of 8 to 10 pounds (3.6 to 4.5 kg.). A roentgenogram of the thorax revealed multiple osteolytic lesions. Bence-Jones protein was demonstrated in his urine. He died four months later.

It therefore becomes apparent that the benignancy of these solitary myelomas is only relative, that they are intimately associated with what it is customary to refer to as multiple myeloma, if not indeed a part of the same process, and that fairly frequently the full-blown picture of multiple myeloma develops, even following successful excision of the local lesion without local recurrence.

---

[39] Bell, E. T.: Renal Lesions Associated with Multiple Myeloma, Am. J. Path. **9:** 393-419 (July) 1933.

[40] Tennent, W.: Plasmocytoma of Bone, Brit. J. Surg. **32:** 471-476 (April) 1945.

[41] Editorial: The Problem of Myeloma, J. A. M. A. **104:** 1420-1421 (April 20) 1935.

[42] King, B. B.: Solitary Plasma Cell Myeloma of Bone as an Initial Stage of Multiple Myeloma, J. A. M. A. **115:** 36-38 (July 6) 1940.

[43] Geschickter, C. F.: Multiple Myeloma as a Single Lesion, Ann. Surg. **92:** 425-433 (Sept.) 1930.

[44] Cutler, M.; Buschke, F., and Cantril, S. T.: The Course of Single Myeloma of Bone (A Report of Twenty Cases), Surg., Gynec. & Obst. **62:** 918-932 (June) 1936.

[45] Pasternack, J. G., and Waugh, R. L.: Solitary Myeloma of Bone: Clinical and Pathologic Entity, Ann. Surg. **110:** 427-436 (Sept.) 1939.

[46] Hellwig, C. A.: Extramedullary Plasma Cell Tumors as Observed in Various Locations, Arch. Path. **36:** 95-111 (July) 1943.

Another of our patients, a man of 44 years, registered at the clinic in December 1944, because albumin had been discovered in a routine examination of the urine. It contained Bence-Jones protein when examined at the clinic, although roentgenograms of his skull, thorax, spinal column, pelvis and femurs revealed only a small, single defect in his skull. However, a smear of the sternal marrow yielded 6 per cent of myeloma cells, to establish as multiple myeloma what otherwise might have passed for a solitary myeloma. A more recent report on the patient from his home physician stated that within three months after the patient had left the clinic a second lesion had appeared in the femur and 95 per cent of myeloma cells were present in a smear of the sternal marrow. This is an instance of an apparent, not a real solitary myeloma.

It may be of some interest to note here also that since we have begun doing sternal aspirations routinely on these patients, we have not encountered any solitary myelomas. This does not mean that we doubt their occurrence. We do, however, feel that more of the so-called solitary myelomas will be found to be part of a diffuse process as more care is taken to establish the diagnosis.

The pertinent available data on the 10 cases of solitary lesions are listed in table 5. In no instance had the additional confirmation been obtained of a sternal aspiration with negative result.

DIAGNOSIS

The various clinical and laboratory features of this disease are striking, and the occurrence of multiple osteolytic lesions of the bone, Bence-Jones proteinuria and hyperproteinemia is strongly suggestive evidence for the presence of multiple myeloma. However, every effort should be made to confirm this with pathologic material for the sake of accuracy of prognosis and suggestions as to an outline of treatment. To this end, because of its simplicity and broad diagnostic range, the method of sternal aspiration readily lends itself. Beizer and his co-workers,[20e] Young and Osgood,[47] and others have discussed this in detail elsewhere.

With regard to the use of sternal aspiration it must be mentioned that a negative result is not always adequate evidence for excluding the possibility of multiple myeloma. The changes in the bone marrow may be irregularly distributed rather than diffuse, and the results on repeated aspirations are not uniform. In 1 instance a third aspiration of marrow was necessary to secure a diagnostic specimen.

TREATMENT

Unfortunately, there is as yet nothing of proved worth, either curative or palliative, to be offered to patients who have multiple myeloma. Coley's [12] toxin, roentgen therapy and radioactive phosphorus have been tried by ourselves and others with indifferent results, though occasionally with relief of pain. More recently radioactive strontium has been used. Nothing is known of the comparative value of this substance and radioactive phosphorus at present.

One of our patients was put on a high calcium regimen [48] in 1941 and wrote two years later that she was mowing the lawn and doing her own housework and "felt better than she had in ten years." When last heard from in October 1945, fifty-one months after the diagnosis had been established, she was hospitalized for a fracture of her left femur and had not taken any calcium for two years. However, we have reason to believe that this patient had a more chronic form of the disease than most.

Batts [9] reported on 3 patients who underwent laminectomy for decompression of the spinal cord after the development of paraplegia. One died postoperatively, 1 reported herself well at the end of three months and 1 died of pneumonia four years after his operation without evidence of recurrence. A patient on whom operation was performed at the clinic was relieved of paraplegia by removal of an apparently local lesion which had caused compression of the first lumbar vertebra. The patient lived seven and a half years thereafter. The ultimate cause of death was not known.

Table 5.—*Data on Cases of Solitary Lesions*

Age, Yrs.	Sex	Site of Tumor	Bence-Jones Protein	Roentgenographic Changes	Duration, Mos.	Diagnosed by
23	F	Left femur	—	None in skull, thorax or spinal column	42	Biopsy
15	M	Fifth lumbar vertebra	..	None in thorax or spinal column; compression in fifth lumbar vertebra	4	Necropsy
40	M	Second thoracic vertebra	..	Compression in second thoracic vertebra	21	Biopsy
55	F	Left hip	—	None in skull, thorax or left ilium	29	Biopsy
43	M	Left clavicle	—	....	66	Biopsy
54	M	Right scapula	—	In right scapula; none in skull	66	Biopsy
44	M	Right femur	—	In right femur; none in skull or thorax	15	Biopsy
68	M	Presacral	—	None in thorax, spinal column or extremities	108	Biopsy
49	M	Seventh thoracic vertebra	..	None in thorax; compression in seventh thoracic vertebra	36	Biopsy
38	M	Fifth lumbar vertebra	—	None in skull or thorax; compression in fifth lumbar vertebra	102	Biopsy
42.9 *					49 *	

* Average.

PROGNOSIS

Fifty-five patients in this group were followed until the time of their death. For 11 others who are still living, follow-up reports are available.

Of the 55 who died, the average duration of the disease from the onset of symptoms was eighteen and eight-tenths months. The median duration was fifteen months. The longest period of survival was eighty-four months, and the shortest was one month.

The usual duration of symptoms before the patient's first visit to the clinic was eight months, and the expectation for survival thereafter averaged ten months and varied between one week and seventy-two months. The median was somewhat less, with 50 per cent of the patients failing to live throughout the first half year afterward. No correlation between life expectancy and the form of treatment was noted.

In 27 cases in which the serum proteins were found to be elevated the average duration was eighteen and one-tenth months and the average survival after examination was six and one-tenth months.

---

47. Young, R. H., and Osgood, E. E.: Sternal Marrow Aspirated During Life: Cytology in Health and in Disease, Arch. Int. Med. **55**: 186-203 (Feb.) 1935.

48. Calcium gluconate and calcium lactate in equal parts, 20 grains (1.3 Gm.), was administered four times a day for one month, three times a day for one month and thenceforth twice a day. Calcium gluconate, 10 cc. of a 10 per cent solution, was administered intravenously every other day for sixteen doses simultaneously with the beginning of oral administration.

Of 30 patients having Bence-Jones proteinuria who were followed, the duration of the disease averaged twenty-three and seven-tenths months and ranged from one month to seven years.

Although, as can be seen, neither the serum protein nor Bence-Jones proteinuria has any prognostic value, we believe that a distinction between acute and chronic multiple myeloma may be made cytologically on the basis of the smear of the sternal aspiration. This we hope to be able to report on in detail later.

CAUSATION

At present there exists a rather wide diversity of opinion regarding the nature of the parent myeloma cell and the types of multiple myeloma to be found.

It has been suggested that myeloma cells arise from supportive tissue, not marrow,[49] that they arise from myeloblasts,[50] erythroblasts,[51] osteoblasts [52] or the reticuloendothelial cells,[53] or that they are modified lymphoid and develop through a dysplastic plasma cell line, which rarely matures and probably does not produce a true plasma cell when it does mature.

Many observers have felt that in addition to the "plasma cell" type of myeloma, "plasmacytoma," there exist "lymphocytomas,"[55] "myeloblastomas," "erythroblastomas"[56] and "myelocytomas."[57] Christian, who has been repeatedly quoted as supporting the plasma cell type of multiple myeloma, has since stated in a discussion of a paper presented by Giffin, Beizer and Hall[58] that the type of myeloma cell may range between the myelocyte on one hand and the plasma cell on the other. Rosenthal and Vogel's[23] case of a myelocytoma (number 13) is the only case of multiple myeloma of which we have knowledge that was identified as other than a plasma or myeloma cell type by the method of sternal aspiration. All others were made from fixed tissue sections. Even in Rosenthal and Vogel's case the few myeloma cells present were essential to the diagnosis. This implies the possibility that it was actually a myeloma cell type with a leukemoid reaction and that further efforts to secure specimens of marrow might have yielded a different spread of cells.

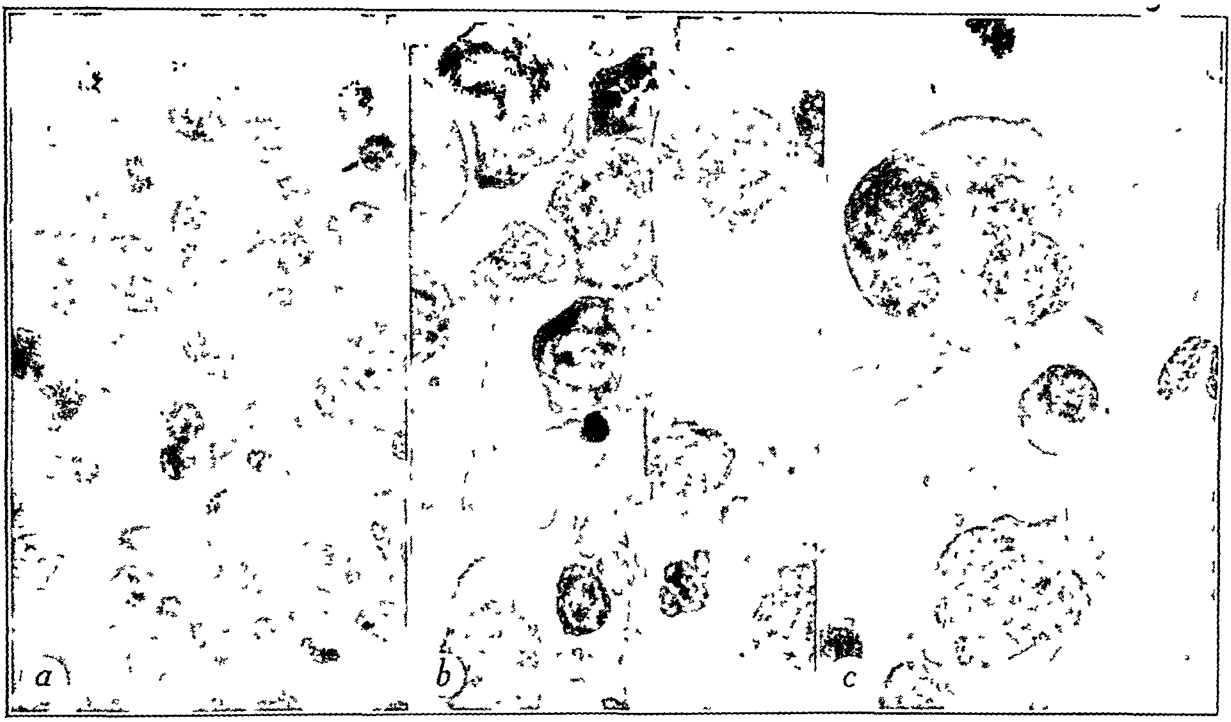


Fig 7.—(*a*) Fixed section of the sternal marrow presents a picture such as is usually referred to as a "myeloblastoma," whereas smears of the same marrow (*b* and *c*) reveal a highly malignant "plasma cell" myeloma.

tissue.[54] Although we have seen myeloma cells which resembled immature red cells and others which looked like stem cells, we have felt that in more malignant lesions, where the younger cells occurred with greater frequency, we could trace their origin to the reticuloendothelial cells. Thus it seems likely to us that myeloma cells arise from the reticuloendothelial cells

In 1 case in this series the lesion was reported by the pathologist from a biopsy specimen as a myeloblastoma. In another, not included in this report, the lesion was previously considered to be a multiple myeloma occurring in a 4 year old child. The report at necropsy was multiple myeloma in which only myeloblastic cells were seen. A review of this case makes a diagnosis of leukopenic leukemia seem more probable.

Every one of the 49 cases so diagnosed by sternal aspiration has been without exception of the myeloma

---

49. Ewing, J: Neoplastic Diseases. A Treatise on Tumors, ed 3, Philadelphia, W. B. Saunders Company, 1928, pp 321-327.

50. (*a*) Ewing.[49] Snapper.[21] (*b*) Multiple Myeloma, Cabot Case 21012.[26c] (*c*) Kaufmann, E: Pathology for Students and Practitioners, translated by S. P. Reimann, Philadelphia, P. Blakiston's Son & Co., 1929, vol 2, pp 1216-1222.

51. (*a*) Ross, Discombe and Robb Smith.[10a] (*b*) Meyer, Halpern and Ogden.[27] (*c*) Editorial.[41] (*d*) Ewing.[49] (*e*) Vance, B. M.: A Case of Multiple Myelomata with a Discussion as to Its Nature and Origin, Am. J. M. Sc. **152:** 693-714 (Nov.) 1916. (*f*) Jordan, H. E.: On the Genetic Relation Between So-Called Plasma Cells and Erythroblasts in Certain Lymph Nodes, Anat. Rec. **42:** 91-108 (April 25) 1929.

52. Williams, H. W.: Multiple Myeloma of Bone: Report of Two Cases with Remarks on Histogenesis, Am. J. Cancer **16:** 540-555 (May) 1932.

53. Beizer, Hall and Giffin.[30c] Lowenhaupt.[2] Scott, E., Stanton, F. M., and Oliver, M.: Multiple Myeloma: A report of Five Cases, Am. J. Cancer **17:** 682-698 (March) 1933. Doan, C. A., cited by Scott, Stanton and Oliver.

54. Jackson, Parker and Bethea.[10b] Stewart and Weber.[20d]

55. Batts.[5] Stewart and Weber.[20d] Vance.[51e]

56. Meyer, Halpern and Ogden.[27] Kaufmann.[50c] Vance.[51e] Jordan.[51f]

el.[23] Kaufmann.[50c] Christian, H. A.: Multiple Comparison of Six Cases, J. Exper. Med. **9:**

zer, L. H., and Hall, B. E.: The Diagnosis of ternal Aspiration, Tr. A. Am. Physicians **56:** 364-370, 1941.

cell type. One of the more recent of these was a myeloma cell type of a high degree of malignancy with many immature forms appearing on the smear of bone marrow. The fixed tissue sections of the same marrow for this patient resembled what has usually been referred to as "myeloblastoma" (fig. 7).

It is for these reasons that we have come to regard the myeloma cell as a specific type associated with multiple myeloma.

Some have disputed whether or not this disease is (1) a form of cancer, (2) a form of leukemia or (3) a form of lymphoma. Its various features give it a resemblance to each of the classifications mentioned, but as long as its clinical and pathologic manifestations are kept in mind, it is of little moment at this time which thesis one supports.

SUMMARY

The clinical and clinical laboratory data in 83 cases of pathologically confirmed multiple myeloma were reviewed, and the opinion is expressed that this disease is represented by a single cell type arising from the reticuloendothelial system in a dysplastic plasma cell line. Multiple myeloma is a uniformly malignant and usually rapidly fatal disease in its generalized form and ranges from the solitary to the leukemic stage at either extreme. Confirmation of the diagnosis is important, and sternal aspiration is most probably the method of choice. By use of this procedure some additional indications of chronicity or acuteness may be derived. Thus far an effective form of therapy has not appeared.

STILBAMIDINE AND PENTAMIDINE IN MULTIPLE MYELOMA

ISIDORE SNAPPER, M.D.
New York

Antimony compounds cure kala-azar, a disease which is accompanied with an increase in the globulin content of the serum.[1] Because of this association, antimony compounds have been tried in other diseases in which hyperglobulinemia occasionally occurs. These preparations have been given in Hodgkin's disease, leukemia and multiple myeloma, but until now favorable reports have not appeared in the literature.

Since 1939 diamidine compounds not containing antimony have been successfully employed in the treatment of kala-azar.[2] This report deals with the influence of two diamidine compounds, Stilbamidine (4,4-diamidinostilbene) and Pentamidine (4,4'-[pentamethylenedioxy]dibenzamidine),[3] on multiple myeloma, a disease in which increase of the globulin content of the serum is of frequent occurrence.[4]

For 13 patients with multiple myeloma the administration of Stilbamidine, combined with a diet low in animal protein, has had a favorable influence on the pain which is characteristic of this disease. For 2 patients with myeloma good results were obtained by the injection of Pentamidine. Until now, neither drug has influenced the course of multiple myeloma for patients who were fed a diet high in protein.

METHOD

Stilbamidine was given either intravenously or intramuscularly. The intramuscular route was chosen only when veins were not readily available for injection. For intramuscular injection the diamidinostilbene was dissolved in 5 cc. of 2 per cent solution of procaine hydrochloride. For intravenous injection, the compound was dissolved in 10 cc. of distilled water. The solution should not be autoclaved.

The dosage schedule was as follows: A first injection of 50 mg. was given, followed two days later by an injection of 100 mg. Thereafter 150 mg. was given, usually every other day but in some cases daily. At first the treatment was limited to fifteen injections of 150 mg. In the later cases the injections were continued until a total dose of 4 to 5 Gm. had been given. In most cases of kala-azar, ten injections of 150 mg. of Stilbamidine are sufficient for cure. Exceptionally, even in kala-azar,[5] larger doses have been necessary. Pentamidine was given every other day in intramuscular injections of 100 mg. dissolved in 5 cc. of distilled water. The total dosage given varied between 2 and 3 Gm.

Table 1 illustrates the diet poor in animal protein as prescribed. Theoretically the diet of these patients should consist mainly of milk, cheese, wheat, wheat gluten and corn. However, practical application renders dietary concessions necessary.

The literature stresses the fact that injections of Stilbamidine are often followed by a fall in blood pressure which on occasion may lead to sweating, dizziness, nausea and even collapse. For this reason it has been advised that 0.25 cc. of a 1 in 2,000 solution of epinephrine be injected subcutaneously ten minutes before the injection of Stilbamidine.[6] In patients with myeloma the injections of epinephrine caused more complaints than the injections of Stilbamidine! To a few patients, when sweating and dizziness were noticed after the injection, 1/150 to 1/200 grain (0.43 to 0.33 mg.) of atropine sulfate was given before the Stilbamidine with good results. Many patients notice a sensation of formication immediately after the injection.

One late sign of intoxication, dissociated anesthesia in the area supplied by the trigeminal nerve, may occur several months after the treatment.[6] This is accompanied with loss of sensation to light touch, whereas the sensations of pain, temperature and pressure are usually preserved. This facial anesthesia begins two and one-half to five months after the treatment has ended. It lasts one or more months but has a tendency to spontaneous recovery. My colleagues and I have observed this dissociated anesthesia in 4 of 20 patients treated with Stilbamidine. It may well be advisable to

---

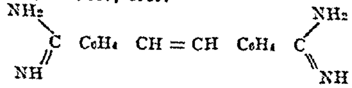
From the Second Medical Service of the Mount Sinai Hospital.

Stilbamidine and Pentamidine are manufactured by May and Baker, Dagenham near London, England. The two compounds used in this study were supplied by Merck and Co., Inc., Rahway, N. J., through the courtesy of Dr. D. F. Robertson.

[1] Snapper, I.: Chinese Lessons to Western Medicine, New York, Interscience Publishers, Inc., 1941.

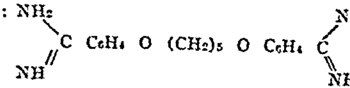
[2] Lourie, E. M., and Yorke, W.: Ann. Trop. Med. **33:** 289, 1939. Adams, A. R. D., and Yorke, W.: ibid. **33:** 323, 1939. Adler, S., and Rachmilewitz, M.: ibid. **33:** 327, 1939.

[3] Stilbamidine:



$$H_2N(HN{=})C\;C_6H_4\;CH{=}CH\;C_6H_4\;C({=}NH)NH_2$$

Pentamidine:



$$H_2N(HN{=})C\;C_6H_4\;O\;(CH_2)_5\;O\;C_6H_4\;C({=}NH)NH_2$$

The di-isothionate of Stilbamidine and the hydrochloride of Pentamidine were used.

[4] Snapper, I.: Medical Clinics on Bone Diseases, New York, Interscience Publishers, Inc., 1943.

[5] Kirk, R., and Sati, M. H.: Ann. Trop. Med. **37:** 34, 1943. Susskind, S.: ibid. **37:** 158, 1943.

[6] Napier, L. E., and Sen Gupta, P. C.: Indian M. Gaz. **77:** 71, 1942; **78:** 177, 1943.

protect these patients from sunlight during and after the treatment.

In patients with renal failure the drug has to be given with great caution.

RESULTS

Fifteen patients with multiple myeloma have been treated to date with injections of Stilbamidine or Pentamidine combined with a diet low in animal protein. Eleven patients were treated with Stilbamidine alone, and 1 patient with Pentamidine alone. In 1 patient Stilbamidine did not influence the pain, but a highly satisfactory result was obtained when Pentamidine was given instead of Stilbamidine. For 2 patients Pentamidine was ineffective, but the pain disappeared after treatment with Stilbamidine. For the time being, therefore, both compounds seem to have a place in the treatment of multiple myeloma, although as a rule Stilbamidine is the more effective preparation.

TABLE 1.—*Diet Poor in Animal Protein*

Tuesday

Carbohydrate 171; protein 64; fat 60; 1,480 calories

Breakfast	Dinner	Supper
1 orange	1 cup cream potato soup	½ cup vegetable soup
½ cup maltex	2 oz meat loaf	½ cup spaghetti creole
1 boiled egg	½ cup mashed potato	½ cup peas
1 slice toast	½ cup beets	2 slices bread
1 teaspoon butter	1 baked custard	2 teaspoons butter
1 cup coffee	1 slice bread	8 oz milk
1 teaspoon sugar	1 teaspoon butter	1 slice watermelon
1 oz (28 3 Gm) milk	8 oz (227 Gm) milk	

Wednesday

Carbohydrate 161, protein 76; fat 78; 1,650 calories

Breakfast	Dinner	Supper
3 prunes	1 cup tomato bouillon	1 cup cream celery soup
½ cup farina	2 oz (57 Gm) beef stew	1 hard cooked egg
1 boiled egg	1 lettuce heart	2 oz cottage cheese
1 slice toast	1 slice bread	1 baked potato
1 cup coffee	1 teaspoon butter	1 serving lettuce and tomato
1 oz milk	8 oz milk	1 blueberry muffin
1 teaspoon sugar	1 serving ice cream	1 teaspoon butter
1 teaspoon butter		1 teaspoon sugar
		1 slice bread
		8 oz milk

Thursday

Carbohydrate 236; protein 69; fat 65; 1,805 calories

Breakfast	Dinner	Supper
½ cup applesauce	1 cup vegetable soup	1 cup consomme
1 cup dry cereal	2 oz pot roast	½ cup string beans
1 boiled egg	½ cup mashed potato	1 steamed potato in jacket
1 slice toast	½ cup peas	½ cup carrots
1 teaspoon butter	3 fresh plums	½ cup beet salad
1 cup coffee	1 slice bread	2 slices bread
1 oz milk	1 teaspoon butter	2 teaspoons butter
1 teaspoon sugar	8 oz milk	8 oz milk
		1 plain cake

Friday

Carbohydrate 213, protein 87; fat 116, 2,224 calories

Breakfast	Dinner	Supper
3 prunes	1 cup cream tomato soup	1 cup cream spinach soup
½ cup farina	2 oz boiled fish	2 eggs
1 boiled egg	1 steamed potato in jacket	2 teaspoons mayonnaise
1 slice toast	½ cup peas	1 oz cottage cheese
1 teaspoon butter	1 slice bread	1 baked potato
1 oz milk	1 teaspoon butter	1 green salad
1 cup coffee	8 oz milk	2 slices bread
1 teaspoon sugar	1 serving ice cream	2 teaspoons butter
		8 oz milk
		2 oatmeal cookies

All these patients were suffering excruciating pains when the treatment was begun. Thirteen were immobilized in bed. All 15 improved considerably as far as the pain itself was concerned. Eleven could walk at the time of discharge from the hospital. One patient had paraplegia due to compression of the cord by myeloma before treatment was begun. The pains in the upper part of the body disappeared during the treatment but, as was to be expected, the mobility of the legs did not return. In 1 patient who, one month after termination of treatment, was able to walk around freely and practically without pain, diabetic coma suddenly developed and proved fatal. Two other patients died, 1 of uremia due to myeloma of the kidneys and 1 of thrombopenia. In both the pains had disappeared

Table 2 shows the quantities of Stilbamidine and Pentamidine given in the first 12 cases.

In 3 of the 15 cases the possible influence of roentgenologic treatment requires discussion. One patient had been treated unsuccessfully with small doses of roentgen irradiation (1,200 r) immediately before the treatment with Stilbamidine was begun. In the second case there was a transverse lesion of the spinal cord; the vertebral column was irradiated during the treatment with Stilbamidine. A third patient had been treated without success with large doses of roentgen irradiation (2,400 and 3,000 r) eight months before admission to the Mount Sinai Hospital. Here she became completely free of pain after treatment with Stilbamidine. Thereupon small doses of roentgen irradiation (1,200 r) were given in the hope that recalcification would be stimulated. The other patients did not receive roentgen irradiation during or after the treatment with diamidine compounds. During the treatment with Stilbamidine morphologic changes develop in the myeloma cells,[7] consisting of precipitates of ribose nucleic acid. The possibility has to be considered that these changes in the nucleoprotein of the cytoplasm of the myeloma cells may render these cells more vulnerable to roentgen rays.

The remarkable clinical improvement has persisted in 1 case for [illegible] Another patient who after treatmen[illegible] was entirely free of symptoms had a relapse sixteen months after the first treatment. Subsequent treatment with Pentamidine was ineffective, but the pains disappeared after renewed treatment with Stilbamidine. In 1 other case the improvement has now lasted for eight months. In other patients relapses of pain have occurred which usually could be treated successfully with a new series of Stilbamidine injections.

Of the 15 patients treated, 2 had Bence-Jones proteinuria with hyperglobulinemia, 4 had Bence-Jones proteinuria without hyperglobulinemia, 4 had hyperglobulinemia without Bence-Jones proteinuria and 5 had neither Bence-Jones proteinuria nor hyperglobulinemia.

The diagnosis of multiple myeloma in these cases was definitely established by punctures of the sternal marrow and biopsies. All subsequent examinations of the marrow proved that even during the period of great improvement and subjective well-being large numbers of myeloma cells were still present. As was mentioned before, the myeloma cells of the patients treated with Stilbamidine showed specific changes;[7] nevertheless the number of these cells did not decrease significantly. In the urine of patients who excreted Bence-Jones protein this abnormal substance persisted. The abnormally large globulin content of the serum also remained during the period of improvement. The treatment evidently at best only checks the disease temporarily and does not cure it.

The following 3 reports of cases illustrate the results which sometimes can be obtained with this treatment.

---

[7] (a) Snapper, I: J. Mt. Sinai Hosp 14: 119, 1946 (b) Snapper, I, and Schneid, B Blood, J. Hematol. 1: 534, 1946.

REPORT OF CASES

Case 1.—J. G., a man 59 years old, was admitted to the Mount Sinai Hospital on January 23, 1945, because of pains in the back radiating to both legs and feet. In the course of the previous year the patient had lost 35 pounds (15.9 Kg.). The pain had been progressive and for several months had disturbed his sleep. He had been admitted previously to two other hospitals, but the pains had become steadily worse.

On admission the patient could move only with difficulty in bed; he complained continuously of pain. Physical examination showed considerable tenderness of the bones and enlargement of the liver and the spleen.

The hemoglobin was 50 per cent. There were 8,800 white blood cells with a normal differential count. The sedimentation rate was 135 mm. per hour (Westergren method). The urine did not contain Bence-Jones protein. The blood serum contained 10.3 mg. of calcium per hundred cubic centimeters, 5.3 mg. of inorganic phosphorus and 16 King-Armstrong units of phosphatase. The total proteins in the serum were 6.5 Gm. per hundred cubic centimeters, with 3.8 Gm. of albumin and 2.7 Gm. of globulin. The formaldehyde gel reaction was negative.

On roentgenologic examination numerous small areas of rarefaction were seen throughout the calvarium. There were many osteophytes in the spine. The pedicles of the thoracic vertebrae were poorly outlined due to osteoporosis. In the pelvis many areas of rarefaction were seen. There was a large, gaping, incomplete fracture of the head of the right femur.

Sternal marrow aspiration showed 52 per cent plasma cells.

Between February 7 and February 23 the patient received six treatments of 200 r each to the lumbar spine and six treatments of 200 r to the sacrum. This treatment had no effect on the pains.

Between February 18 and March 20 nineteen intravenous injections of Stilbamidine were given, totaling 2,500 mg. The first decrease in the pain was noticed about the middle of March, after twelve injections had been given. Thereafter the improvement advanced rapidly. At his discharge, on April 4, the patient walked out of the hospital almost like a normal man. Shortly afterwards he resumed his activities as a porter, and he has been working until now (October 1946) without interruption. His general condition is excellent. He is far stronger than the average person; he currently carries heavy loads on his shoulders and shifts weighty burdens without difficulty.

In this patient the disease is evidently arrested. Repeated roentgenologic examinations reveal that none of the osteolytic areas demonstrated in February 1945 have enlarged to date (May 1946). Most of the areas of decalcification—for instance, those in the skull—have remained unchanged. There are signs of healing in some of the diseased areas of the skeletal system. The large defect at the head of the right femur has practically disappeared. The arrest of the disease is also demonstrated by the fact that none of the vertebrae has collapsed, despite the heavy work the man is doing.

Although this man is free from symptoms and has regained 35 pounds, at best the disease was only arrested, because in May 1945, when he felt entirely well, the bone marrow still contained many myeloma cells. The sedimentation rate of the red blood cells has remained high (81 mm. per hour in March 1946).

Case 2.—Mrs. E. W., 61 years of age, had been suffering from severe pain in the lower part of the back beginning in March 1944. Since May she had been unable to walk and had a great deal of pain even when turning in bed. Between October and December she was in another hospital, where she was confined to bed. At that time roentgenologic examination showed only a moderate degree of osteoporosis. The condition was rapidly progressive, and in February 1945 the patient was admitted to the Mount Sinai Hospital. At this time she could hardly move in bed because of pain on slightest motion. Even slight shaking of the bed caused severe pain.

Table 2.—*Results of Treatment of Twelve Patients Having Myeloma With Stilbamidine and Pentamidine*

	Treatment with Stilbamidine		Total Dosage, Mg.	Bence-Jones Protein in Urine	Globulin in Serum, Gm. in Each 100 Cc.	Total Protein in Serum, Gm. in Each 100 Cc.	Formaldehyde Reaction	Results
	Started	Finished						
J. G.	2/18/45	3/20/45	2,500	—	2.7	6.5	—	Excellent
E W.	4/17/45 6/15/45 6/10/46 8/ 6/46* 9/10/46	5/17/45 7/ 9/45 7/ 7/46 9/ 7/46* 9/26/46	1,175 1,225 2,800 1,000 850	—	1.6	.6 2	—	Excellent; relapse July 1946 after 16 months
J M.	2/12/46	3/14/46	2,150	++	1.9	7.1	—	Pain disappeared; died of myeloma in kidney 4/11/46
K B.	4/ 5/46	6/ 7/46	3,300	++	1.7	8.7	—	Excellent
J M.	4/27/46	6/19/46	5,175	+	5 6	11.8	++	Pain disappeared; died of thrombopenia 6/8/46
J. B.	4/ 7/46	6/ 8/46	5,550	—	5 3	12 6	+++	Pain disappeared; transverse lesion in cord
A. E.	7/ 2/46	8/ 4/46	4,050	+	2 9	7 2	Doubtful	Pain disappeared
R. V.	7/ 9/46	8/ 4/46	2,250	—	3.4	8.5	Doubtful	Excellent
E. R.	7/ 2/46	9/24/46	6,000	—	3.7	7 5	+++	Excellent
G E.	6/ 2/46* 6/22/46	6/22/46* 8/ 4/46	1,300 4,500	—	3.6 4.0	6 6 6 9	+ ..	No result with pentamidine; good result with stilbamidine; died of diabetic coma 9/20/46
H. C.	6/21/46 8/10/46*	8/ 2/46 9/24/46*	4,350 1,600	++	7.7	15 4	++	No result with stilbamidine; excellent result with pentamidine
S C	6/21/46*	8/ 4/46*	2,200	—	4.1	7.4	+	Excellent result with pentamidine

* On these dates treatment was with pentamidine.

The hemoglobin was 65 per cent. There were 10,200 white blood cells with a normal differential count. The sedimentation rate of the red blood cells was first increased (18 mm. in thirty-seven minutes, Linzenmeyer method) but was later found to be normal (18 mm. in sixty-one minutes) even before the treatment with Stilbamidine was started. During the entire observation, the sedimentation rate has remained normal.

The urine did not contain Bence-Jones protein. The blood serum contained 12 mg. of calcium per hundred cubic centimeters, 4 mg. of inorganic phosphorus and 9 King-Armstrong units of phosphatase. The total proteins in the serum were 6.2 Gm. per hundred cubic centimeters, with 4.6 Gm. of albumin and 1.6 Gm. of globulin. The formaldehyde gel reaction was negative.

Comparison of roentgenograms made in March 1945 with roentgenograms made in October 1944 revealed that the disease had progressed rapidly. The skull now contained numerous small areas of bone destruction. There were several pathologic fractures in the pelvis. Many new osteolytic areas had developed in the arms and legs. Puncture of the sternal marrow and sternal biopsy confirmed the diagnosis of multiple myeloma.

A course of Stilbamidine was given between April 17 and May 17, 1945, totaling 1,175 mg. A second series was given between June 15 and July 9, totaling 1,100 mg. Shortly after the beginning of May the patient could sit up in bed without help. In August, after the second series had been terminated, she returned home, where she resumed her usual activities as a housewife. In August anesthesia of the forehead developed. This gradually spread to the cheeks and the lips, but after a few months it started to recede.

When the patient was readmitted for a new check-up in February 1946, some numbness in the distribution of the second branch of the trigeminal nerve still persisted. Roentgenologic examination showed that none of the osteolytic areas had increased in size. The fractures of the pelvis had healed, and there was considerable recalcification and reconstruction of bone in the upper part of both femurs and in the humeri. In April a third series of injections of Stilbamidine was given, totaling 1,225 mg. In this patient also, clinical recovery only had been achieved. In March aspiration of the iliac crest still revealed the presence of 30 per cent myeloma cells in the bone marrow: evidently the disease had only been arrested, not cured.

At the end of July 1946 a relapse of the multiple myeloma set in, which is now being controlled again by a new series of injections of Stilbamidine.

Case 3.—Mrs. K. B., 47 years old, was admitted with the following history: In August 1944 a lower right molar tooth was extracted and a cyst of the jaw removed. In September she noticed the onset of dull gnawing pain in the right thigh. After November, pain in the lower ribs and in the back developed. The pain became progressively worse, so that in September 1945 she was unable to walk without a stick. She was admitted to another hospital, where a diagnosis of multiple myeloma was made. She then received roentgen treatment (2,400 r and 3,000 r) to the right side of the pelvis and to the right hip without relief of pain. The second series of roentgen treatments was finished in September.

In March 1946 she was transferred to the Mount Sinai Hospital. On admission she could not move in bed without pain. When she tried to lift her head from the pillow she suffered excruciating pains. The skeleton was tender on pressure. The mobility of the right hip was much impaired, and abduction of the right leg was greatly limited.

Hemoglobin was 85 per cent. There were 5,200 white blood cells with 3 per cent plasma cells. With this exception the differential count was normal. The sedimentation rate was 20 mm. per hour (Westergren method). The urine contained a moderate amount of Bence-Jones protein. The blood serum contained 11.1 mg. of calcium per hundred cubic centimeters, 2.5 mg. of inorganic phosphate and 7 King-Armstrong units of phosphatase. The total proteins in the serum were 7.5 Gm. per hundred cubic centimeters, with 4.3 Gm. of albumin and 3.2 Gm of globulin. The formaldehyde gel reaction was negative.

Roentgenologic examination of skull, long bones, chest and spine showed numerous destructive lesions. Most of the lesions were small, but large osteolytic areas were seen in the right frontal bone, the left radius and both femurs. A large osteolytic area had destroyed about 50 per cent of the head and the neck of the right femur.

Puncture of the sternal marrow showed the presence of numerous plasma cells.

Between April 5 and May 6 seventeen intravenous injections of Stilbamidine were given, totaling 2,250 mg. On April 8, after three injections had been given, the patient noticed pronounced improvement. The pain in the back had diminished so that now she could lift her head without difficulty. On April 15, after 900 mg. of Stilbamidine had been given, the patient stated that "she was incomparably improved." She was now able to sit up in bed unaided without pain in the back or the right hip. After April 25 she was put in a wheelchair daily, where she could sit without discomfort. On May 4 the patient felt rather well. On standing or after sitting in a chair for a long time she noticed some weakness of the muscles of the hips and the thighs, but did not feel pain. The mobility in the right hip was now practically normal.

New roentgenograms of the head of the right femur showed no change in the large destructive lesion. The patient was therefore not permitted to walk. It was decided at this time to give additional roentgen treatment. The pains due to the myelomatous disease were halted by the treatment with Stilbamidine, but it was hoped that roentgen irradiation might now bring about recalcification.

However, even after this course of irradiation no pronounced evidence of recalcification could be found.

The treatment with Stilbamidine was terminated June 4; by this time a total of 3,450 mg. had been given. The patient now walked about freely and painlessly. Only with difficulty could she be persuaded to use a cane. In December, nearly eight months after the termination of treatment, the patient was in excellent general condition and continued to walk around freely. At this time the sedimentation rate of the red blood cells had become completely normal, 5 mm. per hour. The total blood count showed normal values.

COMMENT

For all 15 patients with multiple myeloma treated with Stilbamidine or Pentamidine and kept on a diet low in animal protein, considerable improvement was obtained. These substances evidently have a specific influence on the disease, as is evidenced by the rapid alleviation of pain after the treatment has been instituted. The disease is, however, not cured but is temporarily checked in its development. The latter result can be obtained even in cases in which the disease has been rapidly progressive before the treatment is started.

A word of caution is in order. The disappearance of the pain may lead to premature mobilization of these patients. Despite the alleviation of pain, resulting from the treatment with Stilbamidine, the skeleton is still intensely diseased. Mobilization should therefore be gradual in order to prevent new fractures.

It is pertinent to inquire why the pains disappear although the disease persists. It may be assumed that Stilbamidine, and sometimes also Pentamidine, is capable of arresting proliferation of the myeloma cells because in the cases reported the osteolytic lesions have not expanded for some time after the cessation of treatment with Stilbamidine. There are other conditions in which arrest of abnormal proliferation in bone is accompanied by disappearance of pain even if the disease of the bone persists. In patients with Recklinghausen's disease of the bone, removal of the parathyroid adenoma often relieves the pain in the bone within two days after the operation. At this time the bone is still intensely diseased but the progressive erosion by osteoclastic proliferation is arrested. Analogous conditions may well exist in patients with mammary cancer and skeletal metastases in whom testosterone treatment occasionally relieves the pain. In these cases the carcinomatous deposits in the bone do not disappear but for some time the proliferation is halted. During this period the pain is much relieved. It is therefore possible that arrest of proliferation of the myeloma cells explains the improvement observed in patients treated with Stilbamidine and Pentamidine.

The arresting influence which Stilbamidine seems to exercise on the development of multiple myeloma may well be connected with observations recently reported by Kopac.[8] He found that in tissue cultures Stilbamidine destroys neoplastic cells of transplantable animal tumors without damaging the normal cells. The shape of the nuclei of tumor cells changed under the influence of Stilbamidine, and mitosis of the tumor cells was stopped. Kopac is of the opinion that Stilbamidine has a chemical influence on certain specific nucleoproteins of the nuclei. In the series reported here no change of the nucleoprotein of the nuclei of the myeloma cells could be observed. However, as mentioned earlier, in

---

[8] Kopac, M. J.: Tr. New York Acad. Sc. 8: 5, 1945.

10 of 13 patients with myeloma treated with Stilbamidine, specific changes of the nucleoprotein of the cytoplasm, that is, of the ribonucleic acid, occurred.[7] Until now these changes of the cytoplasm of the myeloma cells have not been found after treatment with Pentamidine.

SUMMARY

A series of fifteen or more intravenous injections of 150 mg. of Stilbamidine (4,4-diamidinostilbene), combined with a diet low in animal protein, relieves the pain in most cases of multiple myeloma. For 1 patient the same result was obtained by intramuscular administration of 100 mg. of Pentamidine (4,4′-[pentamethylenedioxy] dibenzamidine). These compounds do not contain antimony. In 1 patient Stilbamidine had no result but Pentamidine relieved the pain. However, the reverse was true in 2 other cases in which Pentamidine seemed to be ineffective but the pain disappeared after treatment with Stilbamidine. Satisfactory even if temporary results have been obtained for all 15 patients with myeloma treated up to the present time.

Improvement starts soon after the inception of the treatment, often beginning after the third or fourth injection. No results have been obtained when the treatment has been accompanied by a diet high in protein.

Fifteen patients have been treated to date. In all cases the pain was favorably influenced. Relapses did occur. Eleven patients were able to walk at the time of discharge from the hospital. One of these died later of diabetic coma. One patient had paraplegia before the treatment was started, and 2 other patients died of myeloma of the kidney and thrombopenia, respectively.

The treatment merely checks the disease and does not cure it. Even when the patients feel completely well, myeloma cells can still be found in the bone marrow and Bence-Jones proteinuria and hyperglobulinemia persist.

During treatment with Stilbamidine specific morphologic changes develop in the cytoplasm of the myeloma cells, consisting of precipitates of ribonucleic acid.

Immunization Against Influenza.—Reactions to influenza vaccine correspond in severity and character to reactions following typhoid vaccine. They are primarily attributable to the virus content. In the studies referred to, about half of the vaccinated individuals had some complaints and about 1 to 2 per cent developed febrile reactions up to 101.5 F. within twenty-four hours of inoculation. Such symptoms usually last no longer than a day. At the site of inoculation, edema, redness and tenderness may develop in about twelve hours and persist for about a day or slightly longer. The local and systemic symptoms are related to the quantity of virus administered rather than to any nonvirus impurities that are present. One word of caution is warranted, and that is the danger of anaphylactic reactions in persons with known egg sensitivity who are given any vaccine of egg origin. The development of sensitivity to repeated inoculations seems to be less of a risk or no risk at all. An adult who has once been given an injection of vaccine originating from an egg, and this includes a good number of vaccines, is much less likely to have an acute reaction than one who is to have his first inoculation. . . . On the basis of the results of these studies carried out by the Commission on Influenza, the Surgeon General directed that plans be made to vaccinate the entire army in the fall of 1945, using vaccine prepared in the same manner as that employed in the field studies. For the first time development of mass production as well as mass immunization with influenza vaccine was involved and was accomplished successfully.—Salk, Jonas E., and Francis, Thomas, Jr.: Immunization Against Influenza, *Annals of Internal Medicine,* September 1946.

PNEUMONIA FOLLOWING NONPENETRATING PULMONARY INJURIES

EDWARD PHILLIPS, M.D.
Oakland, Calif.

"Post-traumatic pneumonia" is a loose term which has been used to describe pneumonia following chest injury, pneumonia following trauma to the body generally,[1] and pneumonia complicating penetrating chest wounds.[2] The phrase post-traumatic pneumonia is used in this paper to indicate the types of pneumonia which follow trauma to the chest. Cases of penetrating wounds are not included because pneumonitis in such cases is usually due to direct contamination.

This report is based on observations made on 73 adult patients with post-traumatic pneumonia treated in this hospital. Every patient had an acute febrile illness with signs and symptoms of pneumonia confirmed by roentgenograms. Patients who were unconscious or who received a general anesthetic are not included in this study. Patients who had emesis were excluded, as were patients with possible aspiration or hypostatic pneumonia. All patients in whom pneumonia developed one week subsequent to their injury were ambulatory, and the cases are reported later.

Twenty-eight patients with post-traumatic pneumonia had an intact thorax; 43 patients had fractured ribs, 1 had a fractured scapula and 1 had a fractured sternum.

Three patients died with a resultant mortality rate of 4.1 per cent.

INCIDENCE

Moritz [3] and Blumer,[4] quoting the German literature, have stated that 0.13 to 4.4 per cent of pneumonia is due to trauma.

In this hospital 73 of 3,170 cases of all types of primary pneumonia were due to trauma, the incidence of post-traumatic pneumonia being 2.3 per cent.

The incidence as to age and sex was similar to that reported from this hospital for primary pneumococcic pneumonia.[5]

PATHOGENESIS OF POST-TRAUMATIC PNEUMONIA

It has long been known that pneumonia may follow simple contusion of the chest wall. Frequently such cases have been regarded with skepticism, since one could not be certain that the patient did not have pneumonia before the injury or that the pneumonia and the injury were not coincidental.[3] As more cases were collected, and as the knowledge of the pathogenesis of pneumonia increased, trauma to the chest has been accepted as an etiologic factor in pneumonia.[6] Austrian [7]

From the Department of Medicine, Permanente Foundation Hospital.

[1] Stoneburner, L. T., and Finland, [illegible] nonia Complicating Operations and Trauma: [illegible] and Seventy-Nine Cases of Postoperative a [illegible] Post-Traumatic Pneumonia Associated with Typed Pneumococci, J. A. M. A. **116:** 1497 (April 5) 1941.

[2] Litten, cited by Blumer,[4] p. 162.

[3] Moritz, A. R.: Pathology of Trauma, Philadelphia, Lea & Febiger, 1942, pp. 183-199.

[4] Blumer, G.: Trauma and Pulmonary Disease, in Brahdy, L., and Kahn, S.: Trauma and Disease, Philadelphia, Lea & Febiger, 1941, pp. 159-162.

[5] Collen, M. F., and Phillips, E.: Optimum Dosage of Sulfadiazine in the Treatment of Pneumococcic Pneumonia, Arch. Int. Med. **76:** 22 (July) 1945.

[6] (*a*) Robertson, O. H.: Newer Knowledge Concerning the Inception of Pneumonia and Its Bearing on Prevention, Ann. Int. Med. **18:** 1 (Jan.) 1943. (*b*) Fallon, M.: Lung Injury in the Intact Thorax with Report of a Case, Brit. J. Surg. **28:** 39 (July) 1940. (*c*) Parker, E. F.: Injuries of the Pleura and Lung, J. South Carolina M. A. **36:** 218 (Aug.) 1940. (*d*) Berry, F. B.: The Treatment of Injuries to the Chest, Am. J. Surg. **54:** 280 (Oct.) 1941. (*e*) Spicer, F. W.: Trauma and Internal Disease, Philadelphia, J. B. Lippincott Company, 1939, pp. 103 and 124-128. (*f*) Stoneburner and Finland.[1] Moritz.[3] Blumer.[4]

[7] Austrian, C. R.: Acute Lobar Pneumonia, in Tice, F.: Practice of Medicine, Hagerstown, Md., W. F. Prior Company, Inc., 1945, vol. 3, p. 55.

and Shipley,[8] in recent articles, expressed the opinion that there was some doubt that trauma could be an etiologic factor in pneumonia. Shipley stated that "most pathologists and bacteriologists look askance at trauma as an etiologic factor in pneumonia." However, the work of de Takats and his associates,[9] Robertson,[6a] and Coryllos and Birnbaum[10] has made the pathogenesis of post-traumatic pneumonia clear.

Until the work of de Takats, Fenn and Jenkinson[9] appeared, a rational explanation of the pathogenesis of post-traumatic pneumonia in cases without definite clinical evidence of pulmonary contusion was lacking. Blumer[4] thought that the injury probably lowered resistance to infection. Schiff[11] thought that post-traumatic pneumonia was due to vagal stimulation which produced vasodilatation in the pulmonary field.

De Takats, Fenn and Jenkinson[9] demonstrated by animal experiments that blunt injury to the wall of the chest with or without fracture of the ribs produced a spasm of the bronchial tree and bronchial hypersecretion which resulted in pulmonary atelectasis. Bilateral sectioning of the vagi or a sufficient dose of atropine prevented the occurrence of this chain of events. This proved that atelectasis following trauma to the chest was due to a vagal reflex. These authors also cited clinical cases which supported their experimental work. Coryllos and Birnbaum[10] showed that unrelieved atelectasis is followed by pneumonia. Robertson's[6a] experiments proved that local pulmonary irritation or injury is an important factor in the pathogenesis of pneumonia. Pulmonary injury and/or atelectasis is frequently present in patients with nonpenetrating pulmonary injuries.[12]

Moritz[3] stated that the pathology of post-traumatic pneumonia did not differ from that of lobar pneumonia.

PATHOGENESIS AND PATHOLOGY OF PREDISPOSING PULMONARY LESIONS

It has long been known that extensive pulmonary injury may follow trauma which may not mark or damage the thoracic wall. Fallon[6b] stated that Morgagni first described such pulmonary lesions in 1761. Reports of cases have appeared sporadically in the English literature since 1840.

The work of Zuckerman[13] and of Williams[14] established that pressure applied suddenly to the thorax was capable of producing pulmonary injury without damaging the thoracic wall. Any sudden pressure on the thorax in excess of 2½ to 7½ pounds per square inch may result in pulmonary damage, and if the pressure has been applied only momentarily the thorax may not be marked. This is due to the elasticity of the thorax. It has been demonstrated that the sternum of cadavers may be compressed to the vertebral column without fracturing the ribs.[3]

Osborn[15] has calculated that the pressure sustained on the thorax in automobile accidents may greatly exceed 7 pounds per square inch. In 2 of his cases, pressures far in excess of 7 pounds per square inch had been applied to the thorax for $\frac{1}{30}$ and $\frac{1}{45}$ of a second, respectively. These cases were without fractures or marks on the thorax.

Zuckerman[13] proved in blast injuries that it is the sudden compression of the wall of the chest which contuses the underlying lung. This has been confirmed by Williams,[14] Wilson and Tunbridge[16] and Osborn[15] as the mechanism of pulmonary injury regardless of the source of the force.[17]

Klubs[11] showed in animal experiments that blows delivered to the anterior and lateral aspects of the chest caused more extensive and more numerous injuries to the underlying lung than did blows delivered posteriorly. This is so because the posterior thoracic wall is relatively rigid and thick and is not compressed readily. It is interesting to note that I have not observed a single case of pulmonary injury following strictly posterior blows.

The common causes of lung injuries in the intact thorax are falls from various distances, blows on the chest by flying or falling objects, auto and aviation accidents and "blast."[18] My experience has been similar except that it has not included aviation accidents or "blast" injuries.

There are three types of pulmonary injuries:[15] those due to direct violence, to contrecoup and to "pincer" forces in V-shaped spaces. Lung injuries due to direct violence may show rib markings. These are well seen in children and in animals. The lesion occurring most commonly after direct violence is contusion of the parietal pleura.[19] Klubs[11] also showed that fibrinous pleuritis was common over the affected lobe and demonstrated fine pleural adhesions over the contused areas as early as nine hours after injury. In direct trauma, the lung below the incoming ribs will show varying degrees of subpleural ecchymosis or hematoma and hemorrhagic consolidation of the underlying lung. The latter is due to rupture of the alveolar capillaries.

The typical contrecoup lesion is posterior because the chest is fixed posteriorly and the thorax is compressed from the front and sides. Osborn[15] has elucidated the pathology of these lesions, and this description is based on his work: The earliest contrecoup lesion is a hemorrhagic straight line almost constantly corresponding to the angles of the ribs. This line is often 1 cm. wide and 20 cm. long and usually does not reach to the extreme base but may extend posteriorly to the cupula pleurae. This lesion may be missed easily at autopsy. In addition to the hemorrhagic line, a row of tiny blisters may be present. The hemorrhagic line is due to subpleural hemorrhage and hemorrhagic contusion of the underlying alveoli. Contrecoup lesions may be massive and may endanger life. The lesion may be on the side opposite the direct blow. Extensive contrecoup lesions show hemorrhagic consolidation from the angle of the ribs laterally and anteriorly and may blend with the direct lesion.

The third type of lesion due to "pincer" forces in V-shaped spaces was first described by Osborn[20] in 1940. The V-shaped spaces in the thorax are the costophrenic angles and the posterior part of the right middle lobe. In these spaces pincer forces may be applied to the sides of the V, thus contusing the struc-

---

8. Shipley, A. M.: Injuries of the Chest, in Lewis, D.: Practice of Surgery, Hagerstown, Md., W. F. Prior Company, Inc., 1945, vol. 4, chap. 10, p. 20.

9. de Takats, G.; Fenn, G. K., and Jenkinson, E. L.: Reflex Pulmonary Atelectasis, J. A. M. A. **120:** 686 (Oct. 31) 1942.

10. Coryllos, P. N., and Birnbaum, G. L.: Syndrome of Pneumococcic Bronchial Obstruction, Arch. Int. Med. **51:** 290 (Feb.) 1933.

11. Cited by Fallon.[6b]

12. Phillips, E.: Non-Penetrating Pulmonary Injuries, Permanente Found. M. Bull. **3:** 97 (July) 1945.

13. Zuckerman, S.: Experimental Study of Blast Injuries to the Lungs, Lancet **2:** 219 (Aug. 24) 1940.

14. Williams, E. R. P.: Blast Effects in Warfare, Brit. J. Surg. **30:** 38 (July) 1942.

15. Osborn, G. R.: Findings in 262 Fatal Accidents, Lancet **2:** 277 (Sept. 4) 1943.

16. Wilson, J. V., and Tunbridge, R. E.: Pathological Findings in a Series of Blast Injuries, Lancet **1:** 257 (Feb. 27) 1943.

17. Problems of Blast Injuries, Brit. M. J. **1:** 94 (Jan. 18) 1941.

18. (a) Hass, G. M.: Type of Internal Injuries of Personnel Involved in Aircraft Accidents, J. Aviation Med. **15:** 77 (April) 1944. (b) Berry.[6d] Osborn.[15]

19. (a) Blumer,[4] chap. 5, p. 145. (b) Parker.[6c] Spicer.[6e] Klubs.[11]

20. Osborn, G. R.: Phrenico-Costal Sinus Pneumonia, Brit. M. J. **2:** 317 (Sept. 7) 1940.

tures in the V-space. The contusion in the costophrenic angle is caused by nipping of the lung between the lateral wall of the chest and the spleen or the liver. The posterior part of the middle lobe of the right lung is apt to be nipped between the upper and the lower lobe.

Cavity formation is common in extensive contusions.[15] These are usually seen at the bases. Their walls are smooth and are formed of hard blood clot. Wilson and Tunbridge [16] have described such cavitations in blast injuries. Fallon [6b] reported the case of a 24 year old medical student in whom there developed a hemorrhagic cavity in the lower lobe of the left lung following a blow on the chest sustained while boxing.

Hass [18a] has stated that the subpleural blebs (Osborn's "blisters") are common in aircraft accidents. The blebs are thin walled and occasionally rupture to produce pneumothorax. Deep seated emphysema may also be present, especially in the lower lobes, where the emphysematous areas appear as multiple spherical air-bearing spaces from 2 to 5 mm. in diameter.

PULMONARY INJURIES ASSOCIATED WITH POST-TRAUMATIC PNEUMONIA

In the past three years, 44 adult patients with pulmonary injury with intact thorax have been observed in this hospital. In 4 of these patients with previously normal lungs pneumothorax developed following trauma to the chest, and in 1 of these pneumonia developed. Pneumothorax in the intact thorax following trauma to normal lungs is not as infrequent as the German literature indicates.[19a] Washburn [21] cited such a case and found similar ones in the literature. Roberts and Tubbs [22] reported 3 cases recently.

One patient with hemopneumothorax and 2 patients with hemothorax with intact chest walls were instances of secondary hemothorax. Secondary hemothorax occurs eight to twenty-one days after the injury [19a] and is presumably caused by a rupture of a subpleural hematoma. The patient with hemopneumothorax was an elderly man with a long standing asthma. Pneumonia did not develop in these patients.

Thirteen cases of pulmonary contusion were diagnosed on the basis of hemoptysis and clinical and/or roentgenologic signs of consolidation. In 6 of these patients there later developed pneumonia (table 1). Three additional cases of unsuspected pulmonary contusion with intact thorax were found at autopsy.

Twenty-one patients in whom pneumonia developed after chest injuries without fractures are presumed to have sustained pulmonary injury and/or atelectasis. The rationale for including such cases is based on the work of de Takats and his co-workers cited previously.

Fractures of the thorax are recognized readily but may be missed in cases in which the thorax is not marked. Pulmonary injuries in patients with fractures of the thorax are similar to those already described. In addition, puncture of the lung or its laceration by bone fragments may be present. Seventy-six instances of pulmonary injuries associated with fractures of the chest wall were observed.

Pneumothorax in the presence of fractured ribs usually is presumed to be due to laceration of the lung by a rib fragment but may be due to rupture of a subpleural bleb.[18a] Four cases of pneumothorax were observed. One patient had a tension pneumothorax and subcutaneous emphysema. The presence of subcutaneous emphysema presupposes a laceration in the parietal pleura as well as in the lung.[6c] The patient with tension pneumothorax died fifty hours after the injury. An extensively contused right lung with two small tears in the visceral pleura and a laceration in the parietal pleura were found at autopsy. In 2 other patients with pneumothorax traumatic pneumonia developed (table 1).

Hemopneumothorax must be due to laceration of the lung.[6c] Six such cases were seen. One patient had a stove-in chest, a tension pneumothorax, hemothorax and subcutaneous emphysema; in spite of a complicating pneumonia the patient recovered. In 3 patients pneumonia developed; a fatal case is reported later (case 14). Only one instance of secondary hemopneumothorax was observed in patients with fractured ribs.

Laceration of the lung is followed by slight bleeding which seldom menaces life.[23] Extensive intrathoracic hemorrhage may follow laceration of an intercostal or internal mammary vessel or a vascularized adhesion.[8] Fourteen cases of hemothorax were seen with fractured ribs. One case of secondary hemothorax followed fracture of the clavicle. Three additional cases of secondary hemothorax followed fracture of the ribs. The longest period between injury and the development of hemothorax was twenty-six days.

TABLE 1.—*Traumatic Pulmonary Lesion Present at Onset of Pneumonia*

Lesion Present at Onset of Pneumonia	No. of Patients with Intact Thorax	No. of Patients with Fractures of Thorax
Contusion of lung	6	6
Pneumothorax	1	2
Hemopneumothorax	..	3
Hemothorax	..	4
Mediastinal emphysema	..	1
Subcutaneous emphysema only	..	2
No obvious lesion	21	27
Totals	28	45

When the hemothorax is small it is usually assumed that the bleeding is from a lacerated lung, but the bleeding may be from the parietes. A case of hemothorax due to laceration of the parietal pleura, proved at autopsy, is reported later (case 12).

Six patients with hemothorax also had subcutaneous emphysema, but intrapleural air could not be demonstrated.

In 6 fatal cases of hemothorax wherein death was due to trauma and not to pneumonia, 4 patients had gross laceration of the lung by rib fragments. Two of these patients had a stove-in chest and extensive pulmonary contusion. Three cases of fractured ribs and hemothorax were not recognized ante mortem because extensive injuries of the head or extremities drew attention away from the chest, which was unmarked in each instance.

One patient with hemothorax and fractures of the sternum and third rib on the left side also displayed widening of the mediastinum by roentgenologic examination. After twelve days the mediastinal shadow was normal. This was assumed to have been a mediastinal hemorrhage.

In 4 of the 18 patients with hemothorax, pneumonia developed (table 1). The other surviving patients ran a temperature up to 101 F. until the blood was absorbed or evacuated from the pleural cavity.

---

21. Washburn, F. H.: Traumatic Pneumothorax Without Gross Injury to the Chest Wall (Case Report), Dis. of Chest 9:455 (Sept.) 1943.

22. Roberts, J. E. H., and Tubbs, O. S.: Recent Experience with War Wounds of the Chest, Am. J. Surg. 54:289 (Oct.) 1941.

23. Moritz.[3] Parker.[7c]

Eighteen patients with pulmonary contusion and/or laceration without obvious hemothorax and with rib fractures were treated. The diagnosis was made on the basis of hemoptysis and/or signs of pulmonary consolidation in the absence of evidence of pulmonary infection. Six of these patients subsequently had pneumonia (table 1).

TABLE 2.—*Temporal Relationship of Pneumonia to Injury*

Days from Injury to Onset of Pneumonia	Patients with Intact Thorax		Patients with Fracture of Thorax	
	No	%	No	%
1	6	21.4	18	40.0
2	6	21.4	12	26.7
3	13	17.9	7	15.7
4	2	6.2	1	2.2
5	..	....	..	.
6	..	..	3	6.6
7	..	..	1	2.2
8	1	3.1	1	2.2
13	..	..	1	2.2
17	.	...	1	2.2
Totals	28	100.0	45	100.0

Five patients with fractured ribs had subcutaneous emphysema without other clinical or roentgenologic evidence of pulmonary injury. In 2 of these patients pneumonia developed later. Only 1 patient had preexisting pulmonary disease, namely, pulmonary emphysema with large bilateral bullae. A patient with mediastinal and subcutaneous emphysema contracted pneumonia (table 1).

Twenty-seven patients with thoracic fractures did not have definite evidence of pulmonary injury until pneumonia developed. The reasons for including these cases in this report have been discussed previously.

The diagnosis of pulmonary injury is frequently missed. Osborn[16] and Hass[18a] cited cases in which the symptoms were erroneously ascribed to shock or head injury. Dean, Thomas and Allison[24] stated that physical signs of pulmonary injury may be present although the patient lacks symptoms referable to the respiratory system. The diagnosis must first be suspected and then confirmed. Symptoms of shock, anxiety, restlessness, dyspnea and cyanosis may be due to pulmonary injury.[25] The presence of hemoptysis or of any abnormality in the chest should suggest the diagnosis. Unfortunately, it is a frequent practice in cases of contusion of the chest and fractured ribs to strap the chest without examining the lungs.

TABLE 3.—*Bacteriology of Post-Traumatic Pneumonia*

Organism	No. of Patients with Intact Thorax	No. of Patients with Fractures of Thorax
Undetermined	6	11
Pneumococci, would not type	8	20
Pneumococci, types		
IV	1	1
VI	2	2
IX	1	
XI	1	1
XII	1	..
XIII	2*	1
XIX		1
XXIII	1	1
XXIV	.	1
XXV	2	1
XXVIII	1	..
XXIX	1	1
XXXI		1
XXXII	1	..
XXXIII		3
Totals	28	45

* Sputum in 1 case also contained a few type IV pneumococci.

Every case suggestive of injury to the chest should have frequent, careful physical and roentgenologic studies. Westermark[26] found by careful roentgenologic studies that 65 per cent of patients with chest injuries but without rib fractures had demonstrable changes in the lungs and that 86.6 per cent of those with fractured ribs had demonstrable changes in the lungs! The practice of taking spot films over areas of suspected rib fractures gives little information about the underlying lung and none about the status of the opposite lung or contrecoup injuries. Economy permitting, lateral and posterior-anterior films of the chest should be made in every case.

THE TEMPORAL RELATIONSHIP OF TRAUMA AND PNEUMONIA

The interval between trauma and the development of pneumonia is variable. Blumer[1] has stated that the general rule is to disregard trauma as a factor if pneumonia develops after six days. Shipley[8] was of the opinion that if the pneumonia comes two to three days after the injury, it may be presumed that trauma is the exciting cause. Fallon[9b] has stated that pneumonia may follow trauma by one to ten days. Stoneburner and Finland[1] and Spicer[9c] accepted some cases of pneumonia occurring more than two weeks after injury as post-traumatic. The bulk of the reported cases occurred within six days after injury. Pneumonia occurring later must be evaluated carefully.

TABLE 4.—*Relationship of Pneumonia to Site of Injury*

Site of Pneumonia	No. of Patients with Intact Thorax	No. of Patients with Fractures of Thorax
Same side as injury only	24	30
"Contrecoup" side only	1	9
Same side plus "contrecoup" side	3	6
Totals	28	45

In over 92 per cent of the patients in this series pneumonia developed within six days of the injury (table 2).

BACTERIOLOGIC OBSERVATIONS

Sputum typing was done in 56 (or 76.7 per cent) of the cases. Blood cultures were made in most instances, and pleural and empyema fluids were cultured.

Table 3 shows that there were 56 cases of pneumococcic pneumonia. (One case with sputum containing more streptococci than pneumococci is included because there were more than 11 pneumococci per oil immersion field). Of these, only 28 cases (50 per cent) reacted with specific antiserums, types I to XXXIII. In contrast, 62 per cent of the cases of primary pneumococcic pneumonia in this hospital were type-specific.[5] The small incidence of type-specific pneumococcic pneumonia is interpreted as signifying a preponderance of less virulent and higher type (XXXIV to LXXV) pneumococci in the post-traumatic cases. Indeed, the preponderance of the "higher" and less virulent types of organisms is striking. Types I, II, III, V, VII, VIII, IX and XX, which accounted for approximately 50 per cent of the typed primary pneumococcic pneumonia in this hospital,[5] were not found in the post-traumatic cases.

Only 1 case of bacteremia (type XII) was encountered.

---

[24] Dean, D. M.; Thomas, A. R., and Allison, R. S.: Effects of High Explosive Blast on the Lungs, Lancet 2: 224 (Aug. 24) 1940.

[25] Osborn.[16] Hass.[18a]

[26] Westermark, N., cited by de Takats and others.[9]

SITE OF PNEUMONIA IN RELATION TO SITE OF TRAUMA

In 54 patients (74 per cent) pneumonia developed only on the same side as the injury. Nine patients had bilateral pneumonia, that on the contrecoup side being in the lower posterior lung field. In 10 patients pneumonia developed on the contrecoup side only (table 4).

Stoneburner and Finland[1] failed to find an instance of "contrecoup pneumonia" in 29 patients in whom pneumonia developed following injury to the chest. I am unable to account for this difference between the two series, because contrecoup traumatic pulmonary lesions are common.[12]

Pneumonia of the upper lobe followed direct injury to the upper anterior part of the chest, and in 1 case, to the scapula.

INCIDENCE OF PREVIOUS RESPIRATORY DISEASES OR INJURY TO THE LUNGS

Only 7 patients (9.6 per cent) gave a history of respiratory infection present at the time of injury. Six patients had the common cold, and 1 had asthmatic bronchitis.

TABLE 5.—*Extent and Localization of Pneumonia*

Lobes Involved	No. of Patients with Intact Thorax	No. of Patients with Fractures of Thorax
Single lobe:		
Right upper	2	3
Right lower	10	13
Left upper	..	2
Left lower	11	18
Multiple lobes:		
[illegible]	1	..
[illegible]	2	7
[illegible]	1	..
Right lower, left lower and right upper	..	2
Right middle and lower and left lower	1	..
Totals	28	45

Table 1 shows the existing traumatic pulmonary lesions known to be present when the pneumonia developed.

TYPE OF THERAPY BEFORE THE DEVELOPMENT OF PNEUMONIA

Table 6 shows the type of therapy used in the treatment of thoracic fractures or contusions of the chest before the onset of pneumonia. Twenty-one, or 29 per cent, of the patients had been treated by immobilization of the thorax by adhesive strapping. Three of these patients had complete circular strapping. One patient had a plaster of paris shoulder spica; 1 had a body cast. The patients who had not received previous treatment had relatively mild injuries of the chest.

CLINICAL COURSE

All 73 cases of post-traumatic pneumonia simulated mild to moderately severe primary pneumococcic pneumonia. Leukopenia and the virulent "lower" type pneumococci were not encountered. The incidence of bacteremia and multiple lobe involvement was low. Sputum counts were generally low. The sputum contained 75 or more pneumococci per oil immersion field in only 2 cases, 1 of which was fatal. The latter patient was the only one who showed definite albuminuria (case 12).

The duration of the post-traumatic pneumonia was comparable to that of primary pneumonia. Over 50 per cent of the patients recovered within one week. In 2 of the 3 fatal cases the patients had hemothorax and other complications: case 12 also involved a traumatic rupture of the pancreas, and in the other case there were multiple fractures (case 14). The third patient died after a rib resection for empyema.

TABLE 6.—*Therapy of Chest Injury Before Onset of Pneumonia*

Therapy	Patients with Intact Thorax		Patients with Fractures of Thorax	
	No.	%	No.	%
Chest strapping, ambulatory	8	28.6	7	15.7
Chest strapping, rest in bed in hospital	1	3.55	5	11.1
Hospitalization and symptomatic treatment	4	14.3	22	48.9
Shoulder spica	..	....	1	2.1
Body cast	1	3.55	..	....
No therapy	14	50.0	10	22.2
Totals	28	100.0	45	100.0

COMPLICATIONS

The complications of post-traumatic pneumonia are listed in table 7. Almost all complications occurred in patients with fractured ribs.

One patient was treated inadequately elsewhere and was admitted to this hospital with empyema. He was treated unsuccessfully with intrathoracic instillations of penicillin but recovered after rib resection. The other patient with empyema died, and the case is reported later (case 13).

The incidence of pleural effusion, 5.5 per cent, is higher than that of primary pneumococcic pneumonia in this hospital.[5]

TREATMENT

1. *Prophylactic.*—Post-traumatic pneumonia can be prevented or minimized by the early treatment of all patients with injury to the chest for pulmonary atelectasis and potential infection.

De Takats and his associates[9] showed that the intravenous administration of $\frac{1}{150}$ grain (0.0004 Gm.) of atropine sulfate and $\frac{1}{2}$ grain (0.03 Gm.) papaverine hydrochloride will inhibit or break the vagal reflex which causes bronchospasm and hypersecretion. All patients with chest injury should receive such medication early in order to prevent reflex atelectasis. As much as $\frac{1}{60}$ grain (0.001 Gm.) of atropine[27] and 1$\frac{1}{2}$ grains (0.1 Gm.) of papaverine[28] can be given intravenously every four hours without untoward effect. The intravenous administration of $\frac{1}{150}$ grain (0.0004 Gm.) of atropine and of $\frac{1}{2}$ grain (0.03 Gm.) of papaverine every four hours for two days after injury will relieve bronchospasm and hypersecretion and combat atelectasis and pulmonary edema.[27] Patients who are not

TABLE 7.—*Complicating Conditions in Seventy-Three Cases of Post-Traumatic Pneumonia*

Complication	No. of Patients with Intact Thorax	No. of Patients with Fractures of Thorax	Total	Incidence, %
Empyema	1	1	2	2.7
Sterile effusion	..	4	4	5.5
Spread to other lobes	..	4	4	5.5
Atelectasis of a lobe	1	2	3	4.1
Pulmonary edema	..	1	1	1.4

---

[27] de Takats, G.; Beck, W. C., and Fenn, G. K.: Pulmonary Embolism: An Experimental and Clinical Study, Surgery 6: 339 (Sept.) 1939.

[28] Phillips, E., and Levine, E. B.: Unpublished data.

hospitalized may be given comparable oral doses of the drugs, although the value of such treatment is not established.

All patients hospitalized with injuries to the chest must receive large doses of penicillin or sulfadiazine early in order to prevent pneumonia. In this series pneumonia developed in 2 patients with blood sulfadiazine levels of less than 8 mg. per hundred cubic centimeters. In patients with higher sulfadiazine blood levels pneumonia did not develop. Penicillin is the drug of choice because of its efficacy and freedom from serious toxic reactions.

Twenty-six consecutive patients with severe chest and pulmonary injuries who were placed on the above regimen did not contract pneumonia or other complicating infections.

2. *Active Treatment.*—Patients with mild to moderately severe post-traumatic pneumonia responded well to penicillin therapy. Penicillin in doses of 25,000 units should be administered intramuscularly every three hours until the temperature has been normal for forty-eight to seventy-two hours.[29] The oral administration every three hours of 100,000 units of calcium penicillin combined with 2 Gm. of calcium carbonate[30] produced satisfactory therapeutic results in patients with mild pneumonia.

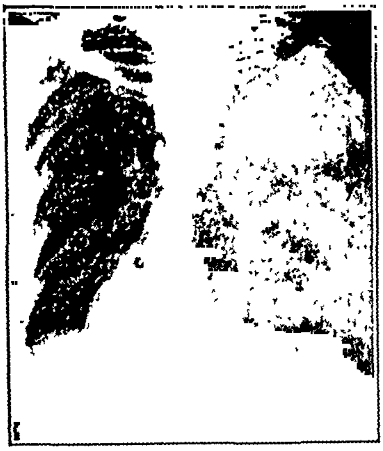


Fig. 1 (case 3).—Type IV pneumococcic pneumonia of the right lung.

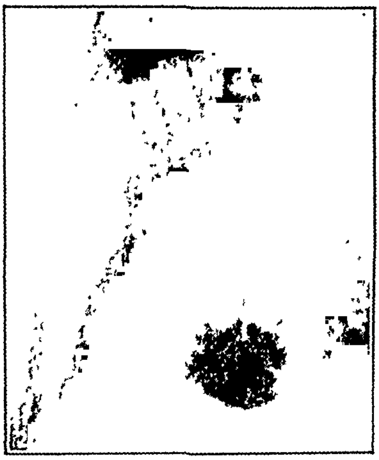


Fig. 2 (case 3).—Type IV pneumococcic pneumonia of the right lung.

Patients with severe pneumonia (although rare in the post-traumatic group) should be treated with both penicillin and sulfadiazine. Since it has been demonstrated that "double doses" of sulfadiazine resulted in a decrease in the mortality rate and a decrease in the incidence of complicating conditions without any increase in the incidence of toxic reactions,[5] 5 Gm. of sodium sulfadiazine in 500 cc. of sodium *r*-lactate one-sixth molar were given intravenously, and 5 Gm. of sulfadiazine were given orally (total 10 Gm.) as an initial dose. This was followed by 4 Gm. of sulfadiazine every six hours orally as a maintenance dose until the temperature remained normal for twenty-four hours. Adequate alkali (sodium bicarbonate, potassium bicarbonate or sodium lactate) was used routinely to keep the p_H of the urine at 7.5.

Combined penicillin-sulfadiazine therapy is indicated when there is failure to respond to penicillin alone, leukopenia, high pneumococci count in the sputum, pulmonary edema, shock, toxic delirium or other evidence of severe infection or toxicity. In such cases the dose of penicillin may also be increased up to 50,000 units every two hours.

In this series 2 of the patients who died were treated with sulfadiazine alone and probably would have been saved if penicillin had been available.

Oxygen by inhalation is indicated for cyanosis or severe dyspnea. Other adjuvant therapy such as cough mixtures, fluids and non-narcotic analgesics were used as needed.

3. *Relief of Chest Pain.*—De Takats[9] and Harmon[31] have emphasized that the treatment of fractured ribs by adhesive strapping is unphysiologic. The use of strapping or of other procedures which cause hypoventilation should be abandoned. Complete circular strapping is never justified.[22] Harmon, Baker and Kornegay[31] have demonstrated that the injection of local anesthetic drugs at the fracture sites relieves pain, enables the patient to cough with relative comfort and increases his vital capacity. These workers inject each fracture site with 2 to 6 cc. of a solution containing 0.5 per cent procaine hydrochloride and 0.1 per cent Eucupine dihydrochloride. (Eucupine is isoamylhydrocupreine.) Sedatives and depressant analgesics are unnecessary except in the treatment of delirium. In such cases meperidine hydrochloride (Demerol hydrochloride) should be used in preference to morphine or codeine to avoid respiratory depression. Relief of pleuritic pain can be obtained by cutaneous anesthesia with ethyl chloride spray or procaine injections as recommended by Dybdahl.[32] In my experience these measures have proved highly efficacious.

4. *General Measures.*—Patients with pulmonary and chest injuries should be given little, if any, sedatives in order to preserve the cough reflex. Oxygen by inhalation is indicated for cyanosis and dyspnea. Deep breathing exercises or carbon dioxide whiffs may be used for hyperventilation. Expectorants, such as ammonium chloride and saturated solution of potassium iodide to attenuate bronchial secretions, should be given to all patients with thick or tenacious mucus and probably should be used routinely. Frequent movement of bed patients and early ambulation is essential to prevent hypostatic pneumonia.

Patients hospitalized for chest or pulmonary injuries should be in private rooms. All attendants and visitors with respiratory infections should be excluded.[11]

5. *Treatment of Associated Conditions.*—Shock, hemorrhage and respiratory obstruction received first attention in pulmonary injuries. Patients with shock should be treated with oxygen by inhalation,[33] adequate doses of meperidine hydrochloride to alleviate pain and fear, and plasma or blood transfusions. Fluids should be given with caution in order to avoid acute pulmonary

---

[29] Collen, M. F., and Sellers, A. L.: Penicillin Therapy in Pneumococcic Pneumonia, Permanente Found. M. Bull. **3**: 19 (April) 1945. Collen, M. F.; Sellers, A. L., and Kast, E. C.: Combined Penicillin and Sulfadiazine Therapy in Pneumococcic Pneumonia, Am J. M. Sc. **211**: 299 (March) 1946.

[30] Collen, M. F., and others: *Oral Administration of Penicillin,* Permanente Found. M. Bull. **3**: 155 (Oct.) 1945.

[31] Harmon, P. H.; Baker, L. R., and Kornegay, R. D.: Uncomplicated Fractures of Ribs and Major Injuries of the Chest Wall, J. A. M. A. **118**: 30 (Jan. 3) 1942.

[32] Dybdahl, G. L.: Control of Pleuritic Pain by Use of Cutaneous Anesthesia, Permanente Found. M. Bull. **2**: 30 (Jan.) 1944.

edema.[16] It is therefore better to use concentrated plasma or albumin preparations in cases without loss of blood.[34] Patients with pulmonary edema must not be given intravenous fluids, but should be treated with morphine, oxygen by inhalation under positive pressure[33] and intravenous theophylline ethylenediamine. Venesection may be a life-saving procedure in some cases of pulmonary edema.[34]

Hemorrhage in closed hemothorax is seldom alarming,[23] but if signs of bleeding or pulmonary tamponade become alarming, an open operation to ligate a torn vessel is imperative.[22] The current literature recommends the aspiration of hemothorax and partial replacement with air within thirty-six to forty-eight hours after injury.[35] Early aspiration was performed only twice in my series. Patients not treated in this manner had moderate fever which persisted for from five to seven days, or until the pleural cavity was aspirated.

Respiratory obstruction or massive collapse should be treated by aspiration of the mucous plug from the bronchial tree. Bronchoscopy may be a life-saving procedure. Tracheobronchial catheter suction is useful for the removal of accumulated tracheobronchial secretions.

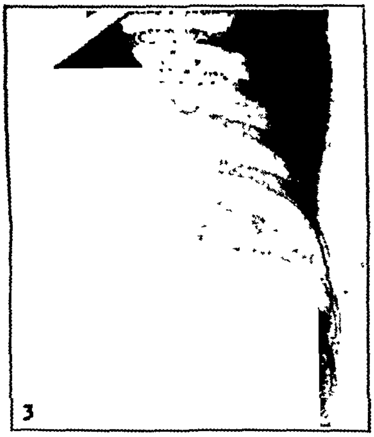


Fig. 3 (case 5).—Fracture of the eighth and ninth ribs on the left side in the midaxillary line.

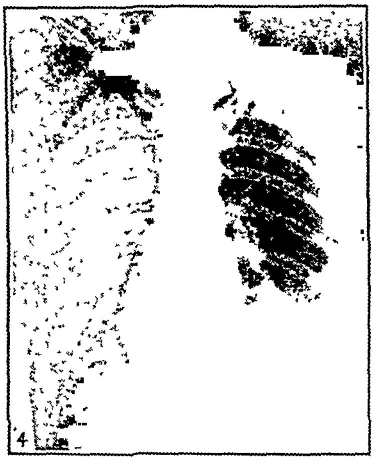


Fig. 4 (case 5).—"Contrecoup" pneumonia, lower lobe of the right lung.

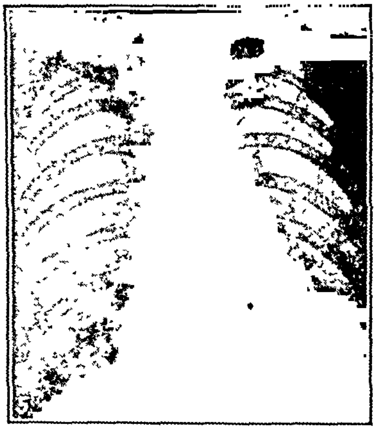


Fig. 5 (case 7).—Fracture of fourth to sixth ribs on the right side complicated by pneumothorax (right) and atelectasis (lower lobe, left).

Tension pneumothorax needs immediate aspiration and does not brook delay. Simple pneumothorax is treated conservatively. Subcutaneous emphysema does not require therapy unless the skin becomes dangerously tight or there is interference with the circulation. Multiple "pie-crusting" incisions are then indicated.

Stove-in chest with paradoxic respiration should be supported by adhesive strapping, sandbags, skeletal traction or skeletal fixation by wiring,[36] if necessary, in order to correct paradoxic respiration and increase the vital capacity.

6. *Treatment of Complications.*—Sterile pleural effusion does not need treatment unless it produces respiratory or circulatory embarrassment. The withdrawal of 1 liter of fluid by thoracentesis is safe. Larger amounts of fluids should be removed only with caution. Empyema may be treated with aspiration followed by intrathoracic instillation of 50,000 units of penicillin[37] once or twice a day. In this hospital, not a frank case of empyema was cured in this manner.[38] When the empyema fluid becomes thick, thoracotomy is indicated. Intrathoracic instillations of penicillin may be of value in aborting empyema in cases of sterile pleural exudates which contain abundant pus cells.

Pulmonary atelectasis can be relieved by the use of expectorants, inhalations of carbon dioxide and forced coughing on the part of the patient. Pulmonary edema complicating pneumonia can be successfully combated by the inhalation of oxygen under positive pressure and the intravenous injection of 0.5 Gm. of theophylline ethylenediamine, 50 cc. of 50 per cent sucrose solution and 250 to 500 cc. of plasma.[39] These may be injected every three hours as necessary.

Spread of the pneumonia to other lobes is an indication for intensive combined therapy with penicillin and sulfadiazine.

REPORT OF CASES

CASE 1.—*Typical Post-Traumatic Pneumonia With Intact and Unmarked Thorax.*—M. G., a white man aged 59, fell 8 feet onto the left side of his chest and left shoulder. The examination was negative except for the patient's subjective complaint of mild pain in the shoulder and chest. The only treatment advised was acetylsalicylic acid. Two days later the patient had a sudden onset of pleuritic pain in the left side, followed by a cough productive of bloody mucopurulent sputum. Physical and roentgenologic examinations revealed pneumonia in the lower lobe of the left lung. The sputum contained many type XXIX pneumococci. Treatment with sulfadiazine resulted in recovery in five days.

CASE 2.—*Development of Post-Traumatic Pneumonia in a Patient with Preexisting Pulmonary Disease Who Was Treated for a Chest Contusion by Adhesive Strapping.*—R. C., a white man aged 46, who had chronic asthmatic bronchitis of five years' duration, slipped and fell to the street and sustained a contusion of the left side of the chest. He complained immediately of pleuritic pain. The chest was strapped. Three days later he entered the hospital with type XI pneumococcic pneumonia in the lower lobe of the left lung. Recovery was uneventful after treatment with sulfadiazine.

CASE 3.—*Multiple-Lobe Pneumonia Following a Severe Blow Which Left the Thorax Unmarked.*—W. S., a white man aged 55, was struck across the anterior right side of the chest

---

34. Hadfield, G., and Christie, R. V.: A Case of Pulmonary Concussion ("Blast") Due to High Explosive, Brit. M. J. **1**: 77 (Jan. 18) 1941.

33. Barach, A. L.: Principles and Practices of Inhalational Therapy, Philadelphia, J. B. Lippincott Company, 1944, pp. 50-52, 75-79 and 195-197.

35. Traumatic Hemothorax, editorial, Lancet **1**: 315 (March 4) 1944. Berry.[21] Roberts and Tubbs.[22]

36. Henley, R. B.: Personal communication to the author.

37. Brown, B.; Ory, E. M.; Meads, M., and Finland, M.: Penicillin Treatment of Empyema: Report of Twenty-Four Cases and Review of the Literature, Ann. Int. Med. **24**: 343 (March) 1946.

38. Collen, M. F.: Personal communication to the author.

39. Collen, M. F., and Dybdahl, G. L.: The Management of Pneumonia, Permanente Found. M. Bull. **1**: 14 (July) 1943.

by a pipe weighing more than 10 pounds. He was stunned and dyspneic for a short time only. Treatment was not given. Three days later a type IV pneumococcic pneumonia of the right lung developed (figs. 1 and 2). Recovery was uneventful after treatment with sulfadiazine.

Case 4.—*Pneumonia Following Injury by Eight Days in a Patient Treated With Codeine.*—H. P., a white man aged 35, fell off a ship into the San Francisco Bay. He was rescued immediately. His only complaint was pain in the left side of the chest. Codeine, 1 grain (0.06 Gm.) every four hours, was prescribed. The patient remained ambulatory but took the codeine continually until pneumonia developed in the lower lobe of the left lung on the eighth day. The sputum contained a moderate number of pneumococci which did not type. Recovery was uneventful after treatment with sulfadiazine.

Case 5.—*"Contrecoup" Pneumonia Which Followed Trauma by Seventeen Days. Previous Treatment by Complete Circular Adhesive Strapping.*—M. W., a white woman aged 31, fell in her home and sustained fractures of the left eighth and ninth ribs in the midaxillary line (fig. 3). The lower chest was completely encircled with adhesive strapping. Seventeen days later pneumonia developed in the right lower lobe (fig. 4). The sputum contained a moderate number of pneumococci which did not type. The patient stated that she had continual chest pain after the injury and that the chest strapping made it "impossible" for her to breathe.

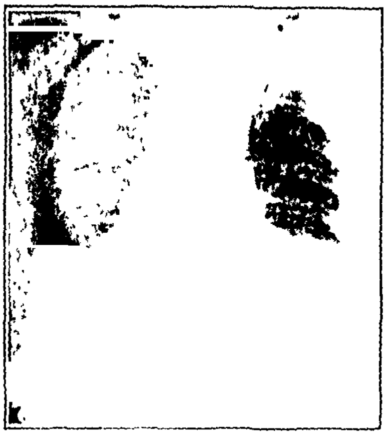


Fig. 6 (case 8).—Bilateral basal pneumococcic pneumonia.

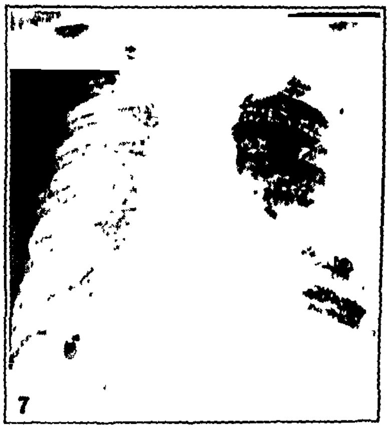


Fig. 7 (case 9).—Pneumococcic pneumonia, lower lobe of the right lung.

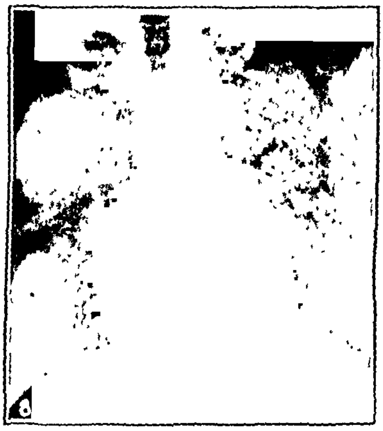


Fig. 8 (case 13).—Bilateral pneumonia on the eleventh hospital day after patient was struck by a crane.

Case 6.—*"Contrecoup" Pneumonia Following Trauma by Eight Days. Previous Treatment by Complete Circular Adhesive Strapping. Respiratory Infection at the Time of Injury.*—J. M., a white man aged 48, bumped the right side of his chest while working. He had continual pain in the right side for two days. His chest was then completely encircled from the nipple level down with adhesive tape. This relieved his symptoms, but six days later type XXXIII pneumococcic pneumonia developed in the lower lobe of the left lung. Recovery was uneventful.

Case 7.—*"Contrecoup" Pneumonia in a Patient with Pulmonary Contusion and Atelectasis.*—H. M., a white woman aged 34, was struck in the right upper side of her chest by a vehicle, sustaining fractures of the fourth to the sixth rib on the right side posteriorly near the spine. This was complicated by a pneumothorax on the right and an atelectasis of the lower lobe of the left lung (fig. 5). The chest was strapped, and no specific attempt was made to relieve the atelectasis. The next day signs and symptoms of pneumonia were present in the lower lobe on the left side. The sputum did not type out pneumococci. Recovery was uneventful after treatment with sulfadiazine.

Case 8.—*Another Case Which Demonstrated the Danger of Chest Strapping in the Presence of Pulmonary Injury.*—C. B., a white man aged 51, fell into a hole 5 feet deep, sustaining fractures of the seventh to the tenth rib on the left side in the axilla. The chest was strapped. The next day the patient complained of bloody sputum and increased pain in the chest. Examination revealed a friction rub and crepitant rales in the base of the left lung. Two days later the patient had findings of bilateral basal pneumococcic pneumonia (fig. 6).

Case 9.—*Pneumonia Following Injury by Thirteen Days in a Patient Treated With Adhesive Strapping.*—C. K., a white man aged 57, slipped and struck the ground with the right side of his chest, sustaining fractures of the fifth to the ninth rib on the right side in the posterior axillary line. The chest was strapped. The patient had continual pain and complained that he was unable to breathe deeply. Thirteen days after injury pneumococcic pneumonia in the lower lobe of the right lung developed (fig. 7). Recovery was uneventful.

Case 10.—*Pneumonia Following Fracture of Ribs Treated by Complete Encirclement of the Chest With Adhesive Tape in the Presence of Pulmonary Findings.*—W. D., a white man aged 56, fell 6 feet and struck the left side of his chest with a piece of lumber, sustaining fractures of the fifth to the tenth rib on the left side in the posterior axillary line. On examination of the chest, wheezes were found throughout the lung fields. A history of any previous respiratory symptoms was not obtained. Nevertheless, the lower chest was completely encircled with adhesive strapping. The next day the patient had pneumococcic pneumonia in the lower lobe of the left lung. Sulfadiazine therapy was instituted. Several days later the infection spread to the lower lobe of the right lung. The highest sulfadiazine blood level was 8 mg. per hundred cubic centimeters. A sterile pleural effusion developed, but the patient made a complete recovery after treatment with penicillin.

Case 11.—*Pneumonia Developing in the Presence of a Sulfadiazine Blood Level of Six Milligrams per Hundred Cubic Centimeters.*—G. N., a white man aged 56, fell 40 feet, sustaining a stove-in chest on the right side. Sulfadiazine was administered. Two days later pneumonia developed in the lower lobe of the right lung. The blood sulfadiazine level was 6.0 mg. per hundred cubic centimeters at the time. The sputum showed a few pneumococci which did not type. The pneumonia quickly spread to involve four lobes. Penicillin therapy was instituted, and the patient recovered in ten days, in spite of *pulmonary edema* on the fifth hospital day.

Case 12.—*Fatal Case of Pneumonia Complicated by a Ruptured Pancreas, Hemothorax and Laceration of the Parietal Pleura.*—L. L., a white man aged 45, was struck by a truck. The seventh, ninth and tenth ribs on the left side were fractured posteriorly. The patient was hospitalized and appeared to be in good condition except for abdominal distention. Three days later the patient became febrile, and it was apparent that he had bilateral pneumonia. The sputum was "loaded" with pneumococci which did not type. The leukocyte count was 36,750 per cubic millimeter with 91 per cent neutrophils. Urinalysis, which had been negative previously, showed 3 plus albumin and many casts. The patient died the next day, in spite of treatment with sulfadiazine. An autopsy revealed bilateral bronchopneumonia. The left pleural cavity contained 500 cc. of blood. The lungs were intact, but there was a laceration in the parietal pleura on the left. The pancreas was ruptured but intra-abdominal signs of acute hemorrhagic pancreatitis were not present.

CASE 13.—*Fatal Case of Post-Traumatic Pneumonia Complicated by Empyema.*—J. C., a white man aged 56, was struck across the anterior portion of the chest by a crane. He lost consciousness momentarily. Examination revealed evidence of injury to the head and chest. There was an area of ecchymosis under the left clavicle, and rales were present throughout the lung fields. Two days later a pleural friction rub was heard at the base of the right lung, and sulfadiazine was administered. The temperature remained around 100 F. A roentgenogram on the eleventh hospital day revealed a bilateral pneumonia (fig. 8). The sputum contained few pneumococci, but Mycobacterium tuberculosis was not found. A thoracentesis on the nineteenth hospital day revealed early empyema on the right which was treated with penicillin instillations for six days without avail. A resection of the ninth rib on the right side was done on the twenty-fifth hospital day. The empyema fluid removed at surgery grew Escherichia coli in pure culture. Five days postoperatively there was some hemorrhage from the wound, but this was controlled by packing. The next day the patient suddenly became restless and irrational and died. A coroner's autopsy was incomplete, and therefore the cause of death could not be established.

CASE 14.—*Fatal Case of Pneumonia Complicating Hemothorax.*—J. K., a white man aged 57, was struck by a train. He was not unconscious. His left humerus was fractured, and on the left side all the ribs from the fourth down were fractured. Subcutaneous emphysema was present bilaterally over the anterior portion of the chest. A roentgenogram showed a left hemothorax. This was aspirated later. On the second day pneumonia developed in the lower lobe of the left lung. One week later the pneumonia spread to the lower lobe of the right lung, and after an apparent recovery it relapsed. The patient died on the fifty-fourth hospital day. A coroner's autopsy revealed bilateral pneumonia and a healing laceration of the lower lobe of the left lung. The parietal pleura was intact.

SUMMARY AND CONCLUSIONS

In 73 cases of pneumonia following nonpenetrating injuries to the chest, 28 patients had an intact thorax and 45 had fractures of the thoracic cage.

Of the cases of primary pneumonia observed in this hospital, 2.4 per cent were post-traumatic. Over 92 per cent of the cases occurred within six days of the injury.

In 54 patients, pneumonia developed at the site of the direct trauma only.

In 19 patients pneumonia developed at the site of the "contrecoup" pulmonary injury; 9 of the 19 also had pneumonia at the site of the direct trauma.

The course and complications of post-traumatic pneumonia simulate those of mild to moderately severe primary pneumococcic pneumonia. The "higher type" pneumococci are the etiologic organisms usually found in post-traumatic pneumonia.

In consideration of the pathogenesis of pulmonary injury and post-traumatic pneumonia and the errors commonly made in the treatment of chest injuries which facilitate the development of pneumonia, it may be stated that the prophylaxis of post-traumatic pneumonia depends on: (1) the prevention of reflex pulmonary atelectasis, (2) the restoration of normal vital capacity, (3) the attenuation of thick, tenacious bronchial mucus, (4) protection of the patient from respiratory pathogens harbored by others, and (5) prophylactic chemotherapy with adequate doses of penicillin or sulfadiazine.

SIMPLIFIED METHOD FOR CALCULATING DIABETIC DIETS

ELIZABETH K. CASO, M.S.
and
FREDRICK J. STARE, M.D.
BOSTON

Numerous methods have been evolved for the calculation of diets to be used by patients with diabetes mellitus and for the simplified instruction of patients in the use of such diets. Some of these methods involve calculations which are unnecessarily accurate in view of the variable composition of foods, as affected by such factors as the variety of seed, the soil, climatic conditions and harvesting, storage and cooking methods. The fairly common practice of instructing patients to weigh diets can be criticized for the same reason plus the fact that a patient who is "tied to a pair of scales" has much less chance of living a normal life, which is so important from a psychologic point of view. The subject of the percentage of carbohydrate in foods, particularly vegetables, has also been confusing to the patient. In general, we have found that many patients disregarded it and ate whatever vegetable was prepared for them

TABLE 1.—*Food Equivalents*

List 1.—Protein Equivalents—Negligible Carbohydrate, 7 Gm. Protein, 5 Gm. Fat

Meat, fish, poultry—1 oz. (28 Gm.)
Egg—1
Cheese, American—1 oz. (28 Gm.)
Cheese, cottage—2 tbs.
Oysters, clams, shrimp—5
Sardines—3 medium
Salmon, tuna, crabmeat—¼ cup
Peanut butter—1½ tbs.
"Cold meat"—3 thin slices
Frankfurt—1 average size

List 2.—Vegetables—Negligible Carbohydrate, Protein and Fat

Celery
Cucumber
Lettuce
Radishes

List 3.—Vegetables—7 Gm. Carbohydrate, 2 Gm. Protein, Negligible Fat (1 Serving = ½ Cup)

Asparagus
Beans, string
Beets
Broccoli
Cabbage
Carrots
"Greens": beet, chard, dandelion, mustard, kale, spinach, turnip
Turnip
Onions
Squash
Tomato

List 4.—Fruits—10 *Gm. Carbohydrate, Negligible Protein* and Negligible Fat

Apple—½ medium
Applesauce, unsweetened—½ cup, scant
Banana—½ small
Berries: raspberries, blueberries or blackberries—½ cup
Cantaloupe—⅓ medium
Cherries—12 small
Dates—2 small
Grapefruit—½ medium
Grapefruit juice, unsweetened—½ cup
Grapes—15 medium
Orange—1 medium or ½ cup juice
Peach—1 medium
Pear—½ large
Pineapple, fresh, diced—½ cup
Pineapple juice, unsweetened—⅓ cup
Plums—2 medium
Prunes—2 medium
Strawberries—12 large
Tangerine—1 large
Watermelon—1 small slice with rind, ⅓ lb. (151 Gm.)

List 5.—Carbohydrate Equivalents—16 Gm. Carbohydrate, 3 *Gm. Protein, Negligible Fat*

Beans, baked and lima—¼ cup
Bread, baker's—1 slice
Corn—¼ cup (1 small ear)
Rice, macaroni, noodles—½ cup
Graham crackers—2
Soda crackers—5
Peas—½ cup, scant
Potato, white—1 small (size 5 to 1 lb., 454 Gm.)
Cereals, cooked—½ cup
Cereals, dry, flakes—1 cup

List 6.—*Fat Equivalents—Negligible Carbohydrate,* Negligible Protein, 4 Gm. Fat

Butter or fortified oleomargarine—1 tsp.
Cream, light—2 tbs.
Mayonnaise—1 tsp.
Oil—1 tsp.
Bacon—1 slice, long, crisp
Milk—(1 cup, 8 oz.) 12 Gm. carbohydrate, 8 Gm. protein, 10 Gm. fat

---

From the Department of Nutrition, Harvard School of Public Health, and the *Medical Clinic, Peter Bent Brigham Hospital.*

at home, irrespective of its carbohydrate content. This practice seldom accounts for more than a 5 to 10 per cent variation in the total carbohydrate intake for the day. Certainly most diabetic patients can tolerate that much variation in their carbohydrate intake.

Many methods of dietary instruction are impractical and unrealistic because they do not take into consideration the patient's food habits. Race, religion and economic status, together with other social and psychologic factors, fundamentally affect the daily selection of food. A laborer who takes his lunch from home presents one problem. His noon meal must be planned around the nonperishable, easily packaged foods. A person with a limited income may not be able to afford more than one serving of fruit and vegetables a day; therefore the carbohydrate in the diet should be figured from less expensive sources. An Italian patient is accustomed to using oil, "pastas," tomato sauces and salads and has definite food patterns. Thus we see that a diet adapted to individual food habits will have a much better chance of being eaten in its entirety.

Table 2.—*Summary of Composition of Food Equivalent Groups*

Foods and Equivalents	Carbohydrate	Protein	Fat
Milk—1 cup	12	8	10
Protein equivalents—list 1	0	7	5
Vegetables—list 2	0	0	0
Vegetables—list 3	7	2	0
Fruits—list 4	10	0	0
Carbohydrate equivalent—list 5	16	3	0
Fat equivalents—list 6	0	0	4

Table 3.—*Composition of a Diabetic Diet*

Carbohydrate 170 Gm., protein 80 Gm., fat 70 Gm., calories 1,600.

Food	Amount	Protein, Gm.	Calcium, Gm.	Iron, Mg.	Vitamin A, Int. U.	Thiamine, Mg.	Riboflavin, Mg.	Niacin, Mg.	Ascorbic Acid, Mg.
Milk	1 pt. (473 cc.)	16	0.60	0.4	800	0.20	0.84	0.5	..
Egg	1	7	0.03	1.3	500	0.07	0.18	0.6	..
Meat, fish, poultry	5 oz. (141 Gm.)	35	0.03	5.5	...	0.42	0.25	7.5	..
Vegetable:									
Green or yellow	½ cup	2	0.03	1.1	4,000	0.06	0.10	0.4	8
Other	½ cup	2	0.02	0.6	200	0.06	0.05	0.2	5
Fruit:									
Citrus	1	..	0.02	0.4	200	0.05	0.05	0.3	45
Other	1	..	0.02	0.6	400	0.05	0.05	0.7	8
Potato	1 small	2	0.01	0.6	...	0.08	0.02	0.7	5
Bread or cereal, whole grain or enriched	6 sl.	18	0.06	3.0	...	0.36	0.24	3.6	..
Butter or oleomargarine	2 tbs.	..	....	...	900	....	....	...	..
Total		82	0.82	13.5	7,000	1.35	1.78	14.5	71
National Research Council allowances for woman, moderate activity		60	0.80	12.0	5,000	1.20	1.60	12.0	70

Table 4.—*How to Calculate a Diabetic Diet Order*

Carbohydrate (C) 180 Gm., protein (P) 80 Gm., fat (F) 60 Gm., calories 1,600

	Amount	C, Gm.	P, Gm.	F, Gm.
Milk, whole	2 cups	24	16	20
	6 serv.	..	42	30
	As desired	..	..	..
	2 serv.	14	4	..
1 serv. green or yellow Fruit (list 4) 1 serv. citrus	3 serv.	30	..	..
		68	62	50
Carbohydrate equivalents (list 5) whole grain or enriched	7 serv.	112	21	..
Fat or equivalents	3 serv.	..	..	12
		180	83	62

Another criticism of some of the diet plans in general use is that they may not contain adequate amounts of the essential nutrients, especially minerals and vitamins. For example, if the amount of milk allowed in the diet is appreciably limited, as it sometimes is because it is a source of carbohydrate, the diet becomes low in calcium and riboflavin. If breads and cereals are greatly restricted in amount, the diet may be low in thiamine. The consumption of gluten bread in the past has also been responsible for a lack of several elements of the B vitamin complex in the diet. The use of whole grain products or of bread and cereals made from enriched flour will tend to prevent this situation. With insulin therapy most diets may contain at least six servings of breads or cereals, which together with average amounts of the other basic foods will supply a normal intake of the vitamin B complex for the usual patient. The sample diabetic diet shown in table 3 illustrates the manner in which such a diet can be adequate nutritionally if it is planned around the basic food groups.

With these factors in mind, we have worked out a simple and useful method of dietary calculations that will result in a diet nutritionally adequate and practical for the patient. This short method has been devised primarily for the busy practitioner who does not have available the hospital or clinic facilities of a trained nutritionist; however, we have found it of equal value to the latter.

It is first necessary to have a simplified list of food equivalents; that is, common foods which furnish approximately the same amount of carbohydrate, protein and fat. This is given in table 1. More complete tables of food equivalents are to be found in any textbook of applied nutrition or dietetics. List 1 of this table gives the protein equivalents or foods which have approximately the same composition as 1 ounce (28 Gm.) of meat. We have taken as the average figure for these protein equivalents: carbohydrate—zero; protein—7 Gm.; fat—5 Gm. Vegetables vary in carbohydrate composition and have been classified by some authors as 3, 6 and 9 per cent or 5 and 10 per cent, according to the approximate amount of carbohydrate which they contain. To simplify this classification we have grouped together the raw vegetables which may be eaten in more or less unlimited quantity (list 2) since they contain negligible amounts of carbohydrate. The vegetables of the highest carbohydrate content, such as legumes, corn and potatoes, are included in the equivalents with bread and cereals in list 5. The rest of the vegetables are grouped together in list 3, and a serving of these vegetables, or one-half cup, is figured as 7 Gm. of carbohydrate and 2 Gm. of protein. These figures represent average values as determined by actual composition and weighted according to the frequency with which the foods are consumed. For example, over a period of one year patients were questioned in the Diabetic Clinic of the Outdoor Department, Peter Bent Brigham Hospital, regarding the types of vegetables they ate on the preceding day. Five hundred sixty-two reported eating a "5 per cent" vegetable and 482 a "10 per cent" vegetable. Thus, these observations help to substantiate the validity of using a value of 7 Gm. of carbohydrate per serving of these vegetables. Fresh fruits range considerably in their carbohydrate composition. Therefore, for uniformity the servings of fruits in list 4 are converted into amounts which yield approximately 10 Gm. of carbohydrate. List 5 consists of the carbohydrate equivalents. These foods have the same composition as one slice of (baker's) bread which has a value of 16 Gm. of carbohydrate and 3 Gm. of protein. Fat equivalents are given in list 6 and are equal to 1 teaspoon of butter containing 4 Gm. of fat. Since the composition of milk differs considerably from that of other foods, it is placed in a separate category. Moreover, it supplies many of the essential nutrients to the diet and, therefore, it is considered basic in the diet and should be included each day.

TABLE 5.—*Number of Servings of Carbohydrate or Fat Equivalents to Complete the Diet Prescription*

180 Gm carbohydrate in prescription
68 Gm. carbohydrate in diet from sources other than bread or equivalent
16 | 112 Gm.
7 servings of carbohydrate equivalents to fill prescription

60 Gm. fat in prescription
50 Gm fat from sources other than butter
4 | 10 Gm.
2½ or 3 tsp of fat equivalents to fill prescription

TABLE 6.—*Sample Day's Menu*

The carbohydrate is divided approximately in these meals on the basis of 2/7, 2/7, 2/7 and 1/7

Breakfast	Lunch	Dinner
Grapefruit—½	Toasted cheese sandwich	Roast leg of lamb—4 oz. (113 Gm)
Soft cooked egg—1	American cheese—1 oz (28 Gm)	Carrots—½ cup
Oatmeal—½ cup	Bread—2 slices	Mixed green salad
Whole wheat toast—1 slice	Fat—1 tsp	Small potato—1
Butter or oleomargarine—1 tsp.	Tomato salad	Bread, white, enriched—1 slice
Milk—1 cup	Prunes—2	Butter or oleo—1 tsp
Coffee	Tea	Orange slices
		Coffee

Night Lunch
Milk—1 cup and graham crackers—2

Table 2 summarizes the carbohydrate, protein and fat content of the various food equivalents listed in table 1. By the use of this table it is possible to calculate diet prescriptions with considerable ease and simplicity, taking into account the amounts of each of these food groups which the patient is desirous of eating. Nutritive adequacy of the diet is generally assured by seeing that at least one or more items from each of these food groups is included in the diet and by selecting a variety of vegetables and fruits in order to supply daily a serving of a green or yellow vegetable and of a fruit or vegetable which is a good source of ascorbic acid. Variety in the diet is achieved by making use of the food equivalents.

Tables 4 and 5 are specific examples of the use of this method in calculating a diet for a patient with diabetes.

To determine the number of servings of carbohydrate equivalents or fat equivalents required to complete the diet prescription, it is necessary only to:

1. Subtract the number of grams of carbohydrate (68) furnished by the other sources of carbohydrate in the diet from the amounts prescribed (180) and divide the result by 16, the number of grams of carbohydrate in one serving of carbohydrate equivalent.
2. Follow the same procedure with regard to fat, except to divide the result by 4, the number of grams of fat in one serving.

The amount of protein in any diet may be adjusted to the prescription by adding or subtracting 1 ounce (28 Gm.) of meat or its equivalent.

Table 6 gives a sample day's menu which is based on the foregoing diet outline and makes use of the food equivalents in table 1.

CONCLUSION

A simplified method for the rapid calculation of diabetic diets has been presented which should be of help to the busy practitioner.

INHERITANCE OF RETINOBLASTOMA

Two Families Supplying Evidence

HAROLD F. FALLS, M.D.
Ann Arbor, Mich.

It is my purpose in this paper to present two new pedigrees which lend support to evidence that retinoblastoma is a hereditary form of neoplasia. An increased interest in the genetic determination of such tumors has been evidenced in the medical literature of recent years. Weller[1] in 1941, Griffith and Sorsby[2] in 1944 and Rados[3] in 1946 carefully reviewed and analyzed the evidence that such malignant neoplasms of childhood may be the results of hereditary factors.

Weller cautiously concluded that there is no clearcut evidence to demonstrate that the predisposition to retinoblastoma behaves either as a simple dominant or as a simple recessive trait. This author postulates an inheritance of a somatic variation, possibly a structural anomaly, on which retinoblastoma may or may not develop. It was further suggested that retinoblastoma may belong to those congenital new growths which have been termed the "phakomatoses."

Griffith and Sorsby concluded that the tumor may be due to an irregular dominant gene; that is, to one which produces the neoplasm in a certain proportion but not in all of the heterozygotes who receive this gene. Waardenburg[4] states that in addition to domi-

---

An investigation supported in part by research grants from the Horace H. Rackham School of Graduate Studies, University of Michigan.

Read before the Section on Ophthalmology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946

[1] Weller, C. V.: The Inheritance of Retinoblastoma and Its Relationship to Practical Eugenics, Cancer Research **1**: 517, 1941.

[2] Griffith, A. D., and Sorsby, A.: The Genetics of Retinoblastoma, Brit. J. Ophth. **28**: 279, 1944.

[3] Rados, A.: Occurrence of Glioma of Retina and Brain in Collateral Lines in Same Family, Arch. Ophth. **35**: 1 (Jan.) 1946.

[4] Waardenburg, P. J.: Das menschliche Auge und seine Erbanlagen, The Hague, M. Nijhoff, 1932.

nant inheritance a recessive gene may account for certain cases wherein consanguinity has been demonstrated in normal parents.

Observations on twins, and particularly on monozygotic twins, are of special value in human genetic research. These studies aid in assessing the role of heredity in the production of the trait being studied. Since identical twins are derived from a single fertilized ovum, they must have precisely the same genetic constitution or genotype. When monozygotic twins have similar tumors in identical organs at approximately the same age, much credence must be given to the role played by heredity in the determination of that tumor. It is of interest that the literature contains two carefully studied monozygotic twin pairs[5] in which both members exhibit retinoblastoma.

The two families which I shall describe have not previously been reported. They constitute Kindreds 502 and 574 in the files of the University of Michigan Heredity Clinic.

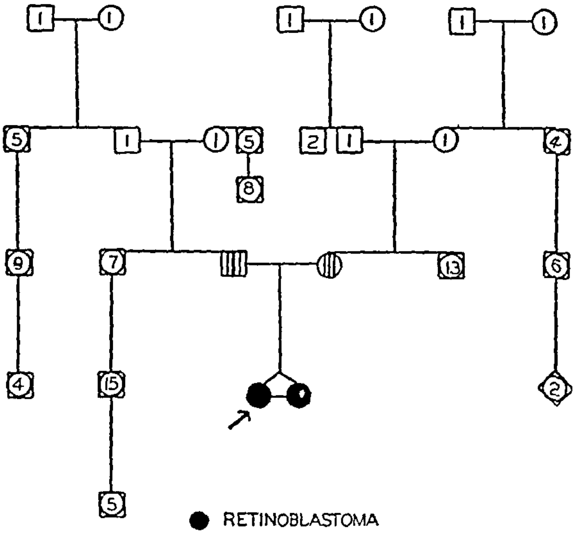


Fig. 1.—Kindred 502.

KINDRED 502

The pedigree chart reproduced in figure 1 follows the conventional plan of arranging siblings on a horizontal line in the order of their birth. All examined individuals were subjected to careful ophthalmologic study, and, in addition, data were secured on the color vision, A-B-O blood types, M-N blood types, secretor types and taste reaction to phenylthiourea.

The propositae for pedigree 502 are thought to be identical twins because they possessed a "single cord" and an identical blood type (OMN) and were remarkably similar in body proportions, facial features and pigmentation. Since the mother belonged to blood group OM and the father to group BMN, it will be seen that the twins could have been of different A-B and M-N types as well as of different sex had they been derived from two separate fertilizations.

The parents were of French and of Scotch-English descent. There was no known family history of ocular neoplasia, and evidence of consanguinity could not be obtained. Examination of the grandparents and aunts and uncles was refused because of certain prejudices.

CLINICAL PATHOLOGY

1. C. J. LaB., a girl aged 6 months, was first seen at the University Hospital Ophthalmic Clinic on July 26, 1943, at which time the parents had become alarmed about an apparent lack of vision which they had first noticed in the child at the age of 4 months. Physical examination showed that the length of body was 23¼ inches (59 cm.) and the weight 13 pounds (6 Kg.). The head was symmetrical. The anterior fontanel was patent and presented normal tension to palpation. The head circumference was 16 inches (41 cm.). The neck and thorax were normal and symmetrical. The heart rhythm and rate were normal. The lungs were clear. Neurologic abnormalities were not demonstrated.

The eyes showed eccentric wandering but would attempt light fixation. The external examination was normal bilaterally. Evidence of inflammatory change was not found. The lens and central media of the right eye were clear. The disk was oval vertically and of fair color and capillarity. Encroaching on the temporal disk margin and extending laterally across and beyond the macular area for at least 8 to 9 disk diameters was an extensive gelatinous pinkish gray mass *Many newly formed vessels were observed in the growth,* which extended into the vitreous for nearly 10 diopters. The remainder of the retina and its vasculature seemed normal. The intraocular tension was normal to palpation. Examination of the left eye revealed conditions similar to those of the right eye except that an additional smaller mass was seen just above and slightly nasal to the disk.

The diagnosis was bilateral retinoblastoma.

Roentgenologic examination of the orbits revealed minimal intraocular calcification in both eyes.

Enucleation of the right eye was advised for the purpose of pathologic study. The parents refused and wished to consider the alternative suggestion of roentgenotherapy before permitting hospitalization. During the course of the conversation it was revealed that C. J. had a twin sister, K. J., and the parents were strongly urged to bring her to the clinic for examination.

2. K. J. LaB. was first seen in the private office of Dr. F. B. Fralick at the age of 11 months. The parents reported that a bilateral gray reflex had been observed at the age of 6 months but that they had procrastinated in returning for examination. The child appeared to be in a good state of health and nutrition, and the physical examination revealed no clinical pathologic changes.

Ophthalmologic examination revealed eccentric roving of the eyes. The external findings were normal except for unduly dilated pupils which reacted poorly to direct light. There was no evidence of inflammation of the anterior segment of either eye. The intraocular tension was normal bilaterally to palpation. Funduscopy revealed that the entire posterior segment of each eye was occupied by a pinkish gray gelatinous appearing mass which was abundantly vascularized.

The diagnosis was bilateral retinoblastoma.

Bilateral enucleation or roentgenotherapy was advised

C. J. was also seen by Dr. Fralick at the same visit. It was reported that the child had shown symptoms of severe pain until spontaneous rupture had occurred at the age of 9 months. The globe collapsed, and soon the child grew more and more cachectic and constantly refused all feeding.

Ophthalmologic examination of the right eye disclosed that the anterior ocular segment was normal and that the posterior segment was filled with a tumor mass. Examination of the left eye revealed phthisis bulbi.

The parents refused therapy for C. J. and she died on March 5, 1944. Intracranial and posterior orbital extension was reported by a local physician.

Pathologic tissue obtained post mortem from the left eye was described by Dr. C. V. Weller as a collapsed eye showing productive inflammation and heavy calcification. The latter process was developing in the remains of a retinoblastoma, the greater part of which was necrotic. There was no evidence of penetration of the globe at the two sites examined.

K. J.'s course was much less spectacular than C. J.'s. The child gradually wasted away in cachexia until death ensued in June 1944. As in C. J.'s case, there was intracranial and posterior orbital extension of the tumor, and pathologic tissue study of the left eye revealed retinoblastoma with extensive necrosis and calcification.

---

[5] Benedict, W. L.: Retinoblastoma in Homologous Eyes of Identical Twins, Arch. Ophth. 2: 545 (Nov.) 1929. Duncan, W. J. L., and Maynard, R. B. M.: Bilateral Glioma in Twins, Tr. Ophth. Soc. Australia 1: 125, 1939.

KINDRED 574

Interest in the second family was stimulated by Dr. Gayle Mehney of Grand Rapids, Mich., who courteously referred the proposita to the Heredity Clinic. Dr. Mehney had diagnosed retinoblastoma in the left eye of this girl at the age of 3½ years. Enucleation was performed by Dr. Alfred Dean, Grand Rapids, and pathologic examination confirmed the clinical diagnosis of retinoblastoma.

When a pedigree of the family (fig. 2) was secured, it was revealed that ocular tumors were common in the sibship of the child's mother. More interesting still was the fact that the mother had her left eye enucleated at the age of 3½ years because of retinoblastoma. Five of the 9 siblings had had a diagnosis of retinoblastoma. Two of those affected survived to reach child bearing age.

III-1.—O. K. T., a boy, was born Dec. 17, 1887 and died Nov. 23, 1890. At the age of 4 months the child's nurse observed a "peculiar reflex from the left eye." Many local physicians were consulted, but no one recognized the nature of the ocular growth. Severe and increasing proptosis ensued. At the time of death large growths were noted in the neck. Abnormality of the right eye was not observed.

III-3.—H. W. T., a boy, was born on May 27, 1891 and died on July 21, 1891. It is reported that this child's left eye was involved in a manner similar to that of his brother, III-1. An enucleation was adivsed, but the parents procrastinated and death quickly followed. The globe was decidedly proptosed at death. The type and nature of extension were not recalled or recorded. It is thought that the right eye also was involved.

III-5.—A. R. T., a woman aged 52, born Sept. 1, 1894, reported an abnormal "light" was noted in the pupil of her left eye at the age of 2½ years. A diagnosis of retinoblastoma (glioma) was made by a local physician, and the eye was enucleated at 3½ years of age. The pathologic diagnosis was given as "glioma of the retina." This woman's only child, a daughter, aged 26, was found to be free of ocular tumors.

III-8.—J. M. T., a boy, who was born June 8, 1904 and died March 6, 1907, was known to have a defective left eye at the age of 1½ years. The eye was enucleated at 2 years of age, and "glioma of the retina" was the pathologic diagnosis. The vision in the right eye was reported as defective, but a description of the pathologic condition of the retina is not available. The presence of abdominal swelling at death suggests possible metastasis to the liver.

III-0.—A. M. T., a woman born Dec. 21, 1907, is the mother of the propositus. The tumor in her left eye was observed by a local physician when she was 3½ years of age and pathologic study of the enucleated eye revealed "glioma of the retina." Our physical and ocular examination in 1944 did not reveal any pathologic condition other than ocular prosthesis in the left orbit.

It is thought that II-1 died of a carcinoma of the stomach, and it is known that I-1 had a large pigmented nevus of the neck and arm. Death of the latter person was attributed to "apoplexy."

COMMENT

Pedigree 502 presents evidence of bilateral retinoblastoma in female identical twins occurring at approximately 6 months of age in both. In the absence of surgery or roentgenotherapy, a fairly rapid intracranial extension of the tumor led to the death of both children. This is the third reported instance wherein retinoblastoma has occurred in both identical twins.

Pedigree 574 contributes another family to the growing list of reported observations of the "vertical transmission" of the neoplasm.

One cannot be dogmatic in stating the mechanism of inheritance of retinoblastoma. In many of the reported pedigrees it appears that the tumor may be transmitted as an irregular dominant trait affecting only a portion of the gene carriers. Other families, however, could be interpreted as exhibiting a simple recessive mendelian pattern. That various types of inheritance may be encountered for a specific disease, in this instance retinoblastoma, is not unusual, for it is rather common to find that the same phenotype may have different genotypes. Macular degeneration of the retina, various forms of cataract, corneal dystrophy, glaucoma and retinitis pigmentosa are only a few of the human ocular anomalies which exhibit this phenomenon.

Since retinoblastoma is so frequently lethal at an early age, natural selection should be operating rather effectively against genes producing this tumor, provided the parents of such children do not make up this loss by increasing their fertility. If it is further assumed that the tumor is not rapidly on the decline, its incidence in the population is probably being sustained by a certain number of mutations or "new genes" in each generation. One should therefore expect a certain number of sporadic cases of retinoblastoma arising by mutation, and the case of twins described in this report may represent such an instance. A mutation, occurring either in oogenesis or in spermatogenesis, would account for both twins being affected.

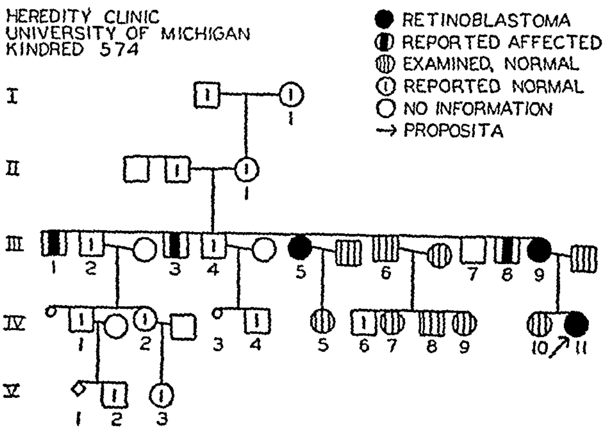


Fig. 2.—Kindred 574.

It is my sincere conviction that parents producing any child with retinoblastoma should be strongly urged to stop all child bearing. It is also advocated that any person surviving enucleation for retinoblastoma be sterilized.

The pathologic material encountered in both families was handled largely by outside sources, and in the case of pedigree 573 the material is no longer available. This is unfortunate, since it would have been of interest to compare the histologic appearance of the obviously inherited type of retinoblastoma with that of the occasional "sporadic" tumor. Cummings and Sorsby[6] could not discover any difference between the histologic character of a sporadic bilateral retinoblastoma and that of a proved genetic bilateral neoplasm.

SUMMARY

1. A family was observed in which retinoblastoma occurred bilaterally in identical female twins.

2. In a second family both the horizontal and the vertical occurrence of retinoblastoma was observed.

---

[6] Cummings, J. N., and Sorsby, A.: Unilateral and Bilateral Retinoblastoma, Brit. J. Ophth. 28: 533, 1944.

3. Retinoblastoma may have different genotypes, and it is not necessary to interpret all pedigrees in terms of a single mechanism of inheritance.

4. Parents who have produced a child with retinoblastoma should be urged to discontinue having children, and children surviving enucleation for retinoblastoma should be sterilized.

ABSTRACT OF DISCUSSION

DR. A. B. REESE, New York: I should like to cite two tragic instances illustrating the practical importance of what Dr. Falls has said. A father who in infancy had had both eyes enucleated because of retinoblastoma was not told of the danger of reproducing the disease, and his only child had bilateral retinoblastoma and bilateral enucleation. The child survives now after several years. A father who had bilateral retinoblastoma and bilateral enucleation in infancy was advised after marriage that it would be safe to have children. The first child had bilateral retinoblastoma and bilateral enucleation and now survives. Before the fate of the first child was known, a second child was conceived. This child also has bilateral retinoblastoma, for which an enucleation has been done on the more advanced eye. The fellow eye is being irradiated.

DR. C. WILBUR RUCKER, Rochester, Minn.: Dr. Falls, in presenting these two new pedigrees, has made a further important contribution to the literature on the inheritance of retinoblastoma. He points out that the tumor may be inherited in any one of a variety of ways in different families and that in some instances it seems to appear as a spontaneous mutation. Painstaking studies, such as this, should lead to a clearer conception of the various modes of inheritance of this disorder and should enable physicians of the future to give more helpful advice than we can give now. In the light of present knowledge certainly Dr. Falls is correct in urging that parents who have produced a child with retinoblastoma discontinue having children and that persons who survive enucleation for retinoblastoma remain childless. Toward the latter group, however, he is taking a hazardous step when he advocates sterilization during childhood. Society would benefit by it without a doubt, but the physician who performs a sterilizing operation on a child, in the absence of a specific statute to the contrary, makes himself liable to suit for assault, instituted by the patient when he reaches the age of 21 years. It would be my opinion that the physician should not risk the possibility of a ruinous legal suit, even for his convictions about eugenics, and that he had better content himself with giving advice on the use of contraceptives.

DR. HAROLD F. FALLS, Ann Arbor, Mich.: Retinoblastoma-like lesions have been produced by synthetic substances. In this respect it is important to state that the genes are complex chemicals and thus effect mutant changes, possibly in a manner similar to that of noxious agents. It is impossible for the clinician to differentiate, in many isolated cases, whether the anomaly in question is the effect of a genetic influence or that of a noxious chemical or physical factor. Dr. Rucker has suggested that it is legally dangerous to advise sterilization of minors. I agree, but, for the benefit of the race and also for the respective families to prevent the misery, the pain and the discomfort to both the parents and the affected individual, I would strongly emphasize the advocation of sterilization. We as physicians can only advise; the initiative falls on the parents.

Bacterial Endocarditis.—The success of the treatment of subacute bacterial endocarditis lies first in early diagnosis, which is hastened and confirmed by obtaining blood cultures three times daily for three successive days; second, in prolonged treatment with penicillin in adequate dosage; third, management of the cardiac failure; fourth, employment of general measures, especially blood transfusions and replacement of serum proteins; and, fifth, in the use of in vitro studies, which are of inestimable value in prognosis and in governing the course of therapy.—McMillan, Robert L.: Subacute Bacterial (Streptococcus Viridans) Endocarditis Treated with Penicillin, *Am. J. Med.*, December 1946.

Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association and Hygeia, the Health Magazine
Chicago

(*Continued from page 104*)

(NOTE.—*Following is the eleventh chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of THE JOURNAL. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in THE JOURNAL. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—ED.)

CHAPTER 11. *Growing Pains, 1875 to 1879*

1875

LOUISVILLE, KY.

The special committee on rank of the medical corps of the Army reported that it had used extraordinary efforts but had been unable to secure any action whatever from Congress. The Surgeon General of the Army expressed his thanks and his regret that nothing had been done; he was sanguine that in the long run the Army Medical Department would be successful if the American Medical Association would continue to take the same interest in the future as it had in the past.

Dr. J. Marion Sims was elected to the presidency of the Association.

Most important of the resolutions adopted was the determination that each year, until otherwise ordered, the President-Elect and permanent Secretary should direct an appeal in the name of the Association to the authorities of each state without a board of health, urging them to establish such boards. The Secretary was to report annually the names of states in which boards of health existed and also those which declined to establish them.

As a supplement to the annual Transactions the prize essay on "Excision of the Larger Joints of the Extremities" by H. Culbertson, M.D., was made available to the members.

1876

PHILADELPHIA

The celebration of the centennial of the United States was notably observed by the meeting in Philadelphia in 1876. The delegates were welcomed by Dr. William Pepper. He called attention to the tremendous progress that had been made by Philadelphia, which now boasted of 820,000 inhabitants and had the lowest rate of mortality of any city in the world with over half a million inhabitants. He felt that this was largely due to the lack of overcrowding in the city. Especially recommended to the delegates was a visit to the International Exposition then going on in Fairmount Park.

The President's address had dealt in part with syphilis; a motion was passed that 10,000 copies of that portion of his address be reprinted and distributed widely among the membership of the Association.

DR. SARAH HACKETT STEVENSON

At the meeting in Philadelphia in 1876, Dr. Sarah Hackett Stevenson was a delegate from the state of Illinois. She was the first woman member of the American Medical Association. When her name was called in the roll call, Dr. William Brodie of Michigan moved that the names of all female delegates be referred to the Judicial Council. This was on motion laid on the table. Dr. Stevenson, perhaps with remarkable wisdom, must have sat peculiarly quiet throughout the session since her name does not appear as a participant in the making of motions, the offering of resolutions the discussion of any papers or the presentation of any contribution.

Sarah Hackett Stevenson was born at Buffalo Grove, Ill., Feb. 2, 1849. She graduated from the Women's Medical College of Northwestern University and in 1874 went to Europe for two years' study where she worked with Huxley and Darwin. She began to practice in Chicago in 1876 and was sent as a delegate to the annual meeting of the American Medical Association in Philadelphia during that year. She was also the first woman to serve on the staff of the Cook County Hospital.

CONDEMNATION OF CULTISM

Another resolution suggested that members of the medical profession who in any way aid or abet graduation of medical students in irregular or exclusive systems of medicine are deemed thereby to violate the spirit of ethics of the American Medical Association.

STATE BOARDS OF HEALTH

The Secretary reported that boards of health "now exist in Alabama, California, Massachusetts, Michigan, Minnesota, Virginia and Wisconsin—but eight states in all." A careful counting will reveal only seven states listed as having state boards of health. He stated further that the matter was still being urged on the legislatures of the other states.

THE PHARMACOPEIA

Significant also was a resolution introduced by Dr. E. R. Squibb urging the American Medical Association to take the whole subject of the National Pharmacopeia into consideration for a review of its management. Dr. Squibb was requested to reduce to writing his plan for the Pharmacopeia. He found that already an interval of ten years embraced so much detail that it was becoming impracticable to handle it. It was his feeling that perhaps the American Medical Association should be the proper custodian of the Pharmacopeia and that perhaps the American Medical Association should take the leadership and invite cooperation of the American Pharmaceutical Association.

ADDRESS BY DR. J. MARION SIMS

In his presidential address Dr. J. Marion Sims recalled the meeting in Philadelphia in 1872 when so much time was wasted in discussing the woman physician question and the Negro question. He asserted that the Association was a truly representative body and that if any state or county medical society should send as a delegate either a woman or a Negro, the Association was bound to receive the delegate. He felt that the creation of the Judicial Council was a great step in advance in overcoming local problems of ethics which were a great source of annoyance and danger. Dr. Sims condemned particularly the system of education in which first, second and third year students sat side by side on benches at the same time and heard the same lectures year after year. He said:

> Already Chicago moves in the right direction; but Boston now takes the lead, and inaugurates the true scholastic method of classes, and terms of study, and courses of practical instruction, now fully appreciated by such young men as are in earnest in acquiring a thorough medical training.
>
> The Harvard method, with a salaried Faculty wholly independent of fees from students, is the only plan by which we can ever hope for a medical degree of any real value.

He urged the wealthy men of the country to increase the endowments of the medical schools. In his consideration of the Code of Ethics he doubted its significance, its validity or its constitutionality. It was susceptible of being used as an agent of persecution. "Let it stand as it is," he said. "Honorable men do not need its protection; dishonest men are not influenced by its edicts."

He urged widespread publicity concerning syphilis, which he considered the great problem of the day.

J. Marion Sims was opposed to licensure of prostitution as effective in the control of venereal disease. His answer was a system of sanitary inspection and control that would enable the health officer to take charge of those with syphilis and prevent them from spreading it through the community. Boards of health ought to have power to protect the public against all contagious and infectious diseases. He said he would simply include syphilis in the great family of contagious or communicable diseases and make it subject to the same laws and regulations used for their management.

1877

CHICAGO

Dramatic indeed was the opening of the meeting of the American Medical Association in Chicago on June 5, 1877. Dr. N. S. Davis welcomed the delegates; the Transactions said "Thirty-one years ago seventy-six gentlemen met in New York, representing the medical profession in the United States. Two thirds of the members have passed away, and he now failed to recognize a single face, in the meeting today, that was present on that occasion." At that moment a hand was raised, and Dr. N. S. Davis recognized Dr. Washington L. Atlee of Philadelphia, the only physician present who was one of the original seventy-six. Only twenty-nine years had passed since the organizational meeting in New York City, and yet that twenty-nine years had seen the departure from life of many of the great leaders of the previous generation.

ADDRESS OF DR. HENRY I. BOWDITCH

The President of the Association, Dr. Henry I. Bowditch of Boston, pointed out that the American Medical Association had united the physicians of the country, ironed out local idiosyncrasies and brought together men from every section. He remembered that wine flowed freely at public and private gatherings of an earlier day and that there had been occasional disorder observable during the debates but that the Association from this disorder had cemented friendships, so that it became one of the bulwarks of the state and a help toward civilization on this continent. By 1876 he felt, however, that the American Medical Association had lost repute in the Eastern and Middle states and with some of the leaders of the Western and Southern states. This, he felt, was due to two general causes: (1) the furious discussions on points of order and the ethics of professional etiquette and (2) the consciousness that the Association had been expected to produce results in the advancement of medicine and of professional stature out of all reason. He felt also that some of the meetings of the scientific sections had been used for the presentation of "papers or remarks from individuals, smitten with the *cacoethes scribendi aut loquendi*" and that they had not always had the ability or the will to check them. He also felt that the Transactions of the Association were too bulky and included now some papers that had been printed elsewhere and really constituted nothing in the way of advancement.

Another cause of disturbance was the passage of resolutions with lack of sufficient information, but which, nevertheless, compromised the entire Association. Finally, it was claimed, the Association was too democratic. Having ventured these criticisms, Dr. Bowditch offered suggestions for the improvement of the sections and for procuring scientific contributions. He praised highly the work of the Judicial Council in its settlement of questions of dispute. He urged that the social meetings include women and abandon alcoholic drinks.

He urged also, for the first time, that every member of a state medical society become a permanent member of the American Medical Association. Finally, he suggested a smaller delegation in the House of Delegates as representative of the membership.

The remainder of his address dealt with the possibility of association with the Canadian Medical Association and with the Pharmacopeia. He urged support for the Army Medical Library and Museum and of the American Medical College Association.

This address having been referred to a special committee, a report was received leading to improvement of the sections. The committee did not favor any change in the present plan of organization and considered association with the Canadian Medical Association impracticable.

The meeting in Chicago in 1877 was most impressive to Dr. Charles B. Johnson, who attended as a delegate from the Illinois State Medical Society at Champaign, Ill. The meeting was in the Palmer House and there were no elevators, so that guests climbed to the top stories. Dr. Johnson recalled seeing the venerable Dr. S. D. Gross of Philadelphia mounting the stairs laboriously. Dr. Gross stopped for a brief chat with Dr. J. Marion Sims, who had been President the year previously, and Dr. Johnson heard the renowned gynecologist say that "if he had his professional life to live over he would by hook or crook try to get more money out of it."

The address of Dr. Bowditch he remembered for a long time because of the recommendation that the American Medical Association conventions be conducted on temperance principles.

When Dr. Bowditch attended the meeting of the American Medical Association in Chicago in 1908, one of the sessions was held in a German hotel and the refreshments consisted of beer and pretzels. He tried to get a cup of coffee, but the waiter told him it could not be had. Then he asked for a glass of water. The waiter looked at him in astonishment but finally served the water.

PHARMACOPEIA VS. DISPENSATORY

At this point Dr. E. R. Squibb of New York presented a report on the revision of the Pharmacopeia. The underlying grievance was a personal matter between Dr. Squibb and Dr. H. C. Wood of the U. S. Dispensatory. Dr. Squibb began to read at 10 o'clock and was still reading at 11 o'clock. After another considerable period, a motion was made that Dr. Squibb be permitted to resume on Thursday at 12 noon and be given twenty minutes in which to finish his remarks. The remainder of the session was to be given to those entertaining opposite views to those of Dr. Squibb.

Intervening was a prolonged discussion on representation of homeopathic groups and the licensure of homeopathic physicians in various states.

When Dr. Squibb again began reading his address it was discovered that he could not conclude, and he was given additional time. He continued reading until the expiration of this additional time, and then, since he had not concluded, the Association proceeded to elect its officers.

Following the election by vote, a committee of five was appointed to examine the papers of Dr. Squibb and of Dr. Wood and of others and to determine the extent to which the American Medical Association should participate in the Pharmacopeia.

THE STATE BOARDS OF HEALTH

On the final day of the session, attention was called to the fact that the American Medical Association through its President and Secretary had urged the governor in every state to establish a state board of health. A resolution was passed urging the President and the Secretary of the Association to continue such an appeal year after year to the governor in every state until such state boards of health should be established. This was one of the most fundamental contributions made by the American Medical Association to the advancement of public health in the United States.

NEW SECTIONS

Now came appeals for the establishment of a new section on ophthalmology, otology and laryngology, since these specialties had assumed full stature with surgery and internal medicine.

INCREASED MILITARY MEDICAL RECOGNITION

A report was made from the committee that had urged on the Congress the establishment of better recognition of the medical staff of the U. S. Army. By this time the efforts of the committee had achieved some success. A letter from Surgeon General Joseph K. Barnes of the U. S. Army thanked the committee and expressed appreciation of the influence exerted in behalf of the medical officers of the Army by the American Medical Association.

1878

BUFFALO

Extensive reports were made by the delegates who had visited the Canadian Medical Association, the British Medical Association and the International Medical Congress of Geneva. The report from Geneva urged the possibility of developing a uniform pharmacopeia throughout the world—an ideal still sought in 1946 by the Health Organization of the United Nations.

HOMEOPATHIC PROBLEMS

The Judicial Council presented to this meeting charges against the Michigan State Medical Society for having elected as a delegate to the American Medical

Association one Dr. E. L. Dunster of the University of Michigan "knowing him to be engaged in aiding and abetting the graduation of students devoted to an exclusive dogma in medicine." Nothing had been found in the Principles of Ethics which would bear directly on the charges. From time to time resolutions had been adopted referring to the practice of cultism, but these resolutions did not constitute a part of the Code of Ethics. This report was discussed freely. Finally, a motion was made asking the Judicial Council to report at a subsequent meeting a law to meet the case in question.

At the meeting of the next day, Dr. Nathan Smith Davis proposed the following addition to the Principles of Ethics:

> And hence it is considered derogatory to the interests of the public and the honor of the profession, for any physician or teacher to aid, in any way, the medical teaching or graduation of persons knowing them to be supporters and intended practitioners of some irregular and exclusive system of medicine.

ORGANIZATIONAL PROGRESS

The Buffalo meeting elected Dr. Theophilus Parvin, then of Indiana, President.

An extensive report by a committee of N. S. Davis and S. D. Gross concerned the recommendations made by the President, Henry Bowditch, in the year previously. These two leaders were not inclined to accept the suggestions of Dr. Bowditch as to changing the nature of membership in the House of Delegates. They had some alternative proposals as to the selection of papers for the sections and as to the decisions on publication of papers. Dr. Bowditch submitted for himself a minority report disagreeing with them, but the majority report was adopted.

Ultimately the ideas of Dr. Bowditch as to representation in the House of Delegates and the consideration of papers read in the sections prevailed. The improvement in general quality of the medical profession, the raising of medical standards, the organization of the state medical societies and the advancement of medical science made the suggestions wholly logical.

The committee which had been urging the establishment of state boards of health was happy to announce that three additional states had founded boards of health so that now there were nineteen in all.

RESTRAINT OF THE INSANE

Psychiatry was discussed, and a resolution was adopted that the personal restraint of the insane is an essential element in the treatment of their disease. Nevertheless it was recognized that the state had a right to surveillance or legal regulation over restraints on the insane in order to punish any abuses of the right of restraint.

The report on the Michigan State Medical Society and Dr. Dunster indicated that there was no law by which the Michigan State Medical Society could be found in conflict with medical ethics. Immediately thereafter an amendment to the Principles of Ethics was adopted as previously suggested, and this took care of the situation.

PROMOTION OF THE PUBLIC HEALTH

In his presidential address Dr. T. G. Richardson paid attention to the improvement in the sections. The most significant portion of his address dealt with the creation of the state boards of health and the prevention of illness as their proper field of activity. He urged particularly better education of the public in regard to health and spoke with scorn of the gentleman who took his 14 year old daughter out of a first class school because a human skeleton was brought into the classroom by the professor of physiology, who was going to teach the pupils a few facts in regard to respiration and circulation. Dr. Richardson opposed federal control of public hygiene, but he recognized the necessity for a federal agency to prevent the introduction of contagious and infectious diseases from abroad. The 45th Congress had taken the first action since 1799 toward enforcing public health laws. Here is the concluding paragraph from Dr. Richardson's address:

> Whatever doubts there may be as to the extent of the authority possessed by the central government, there seems to be no dispute that within the limits of each separate state resides a power which with reference to all such matters is practically supreme. It is to this power represented by the legislature and executive of each state that we must look for the enactment and enforcement of such laws as state medicine demands of a wise government, economical not less of the lives and health of its citizens than of its material resources. It is therefore upon this power that the state medical societies should concentrate all their influence, professional and social, to effect the necessary legislation. They should employ their best endeavors to have state boards of health created where these do not exist, and they should by all means secure the right of nomination for appointment upon such boards; otherwise positions which demand men of peculiar qualifications and sterling integrity will be conferred, as is too often the case, upon mere office hunters, who have no interest whatever in the matter beyond its pecuniary return.

1879

ATLANTA, GA.

Organizations fall into strange traditions of action; patterns are followed until suddenly comes realization of hazard on the path. Dr. Joseph P. Logan of Georgia, who welcomed the delegates to Atlanta on May 6, 1879, stated frankly that he had looked up the previous copies of the Transactions of the American Medical Association to discover how an address of welcome ought to be made. He decided to do a job for Atlanta which "has sprung, in little more than a decade, into a city of 40,000 people." Remember that Atlanta had been devastated by the war. "We have not, however, my friends, sat down in ignoble lamentations over our misfortunes, but have gone to work with energy and determination to rebuild and make better our desolated places." These words are the beginning of a sentence which then continues without interruption for sixteen printed lines having to do with the industries, the works and the climate of Atlanta.

THE METRIC SYSTEM

The report on the International Medical Congress pointed out that the United States Marine Hospital services had adopted the metric system, which was found to work very well, and that it had been adopted by all nations except two—the United States and England. Later in the session a resolution was adopted that the metric system be official and be used in the Transactions. The agitation regarding the metric system was to go on and on for many years; the end is not yet.

A message of congratulation was sent from the convention to Ohio which had passed a bill making possible the dissection of human bodies.

The Association was still disturbing itself as to how to get some prize essays written that would be worthy the name; now four prizes of $250 each were established for strictly original contributions to medical and surgical progress.

ETHICAL RELATIONS AND CULTISM

Especially significant was the debate on the amendment to the Principles of Ethics having to do with exclusive systems of medicine. Because the attendance in Atlanta was small, the resolution was permitted to lie over until the following year.

The representative body also heard of action taken by the section on state medicine and public hygiene in response to an address by Dr. John Shaw Billings on securing statistical data on disease and mortality.

NOTE ON PROPRIETARY MEDICINES

A resolution was offered and referred to the Judicial Council protesting the placing on the market of drugs and combinations of drugs with copyrighted names. This seems to be the first mention of the practice which bore bitter fruit for the American people for many years.

The presidential address of Dr. Theophilus Parvin declared that medicine was the queen of the sciences. He then discussed the philosophy of science and of medicine with sixty references to bibliographic material. It seems to constitute the most learned document presented up to that time as a presidential address; but it concerned itself not at all with any immediate affairs. One reads it again and again puzzling over its meaning and significance, and at last one thinks of that stanza of Omar Khayyam:

Myself when young did eagerly frequent
Doctor and Saint, and heard great argument
About it and about: but evermore
Came out by the same door wherein I went.

(To be continued)

Clinical Notes, Suggestions and New Instruments

AVOIDANCE OF ALLERGY TO LIVER EXTRACT

C. J. SULLIVAN, M.D., and G. O. BROUN, M.D.
St. Louis

One of the difficulties encountered in the treatment of macrocytic anemias with liver extract has been the development in occasional patients of allergic reactions to the liver extracts employed. Schwartz and Legere[1] in a recent article suggested that such allergic reactions may be avoided by changing the "brand" or type of liver extract, by reducing the dose of liver extract, by desensitizing with liver extract or by utilizing a histamine-protein complex as an antigen to produce histamine antibodies. The successful use of folic acid in the treatment of macrocytic anemias[2] suggests the possible value of this material in avoiding the effects of allergy to liver extract.

We have recently observed a patient suffering from addisonian pernicious anemia whose course was complicated by the presence of allergy to liver extract administered by parenteral injection. The sensitivity appeared to be organ-specific rather than species-specific since both hog liver and beef liver produced anaphylactic-like reactions. A minute dose of hog liver produced an immediate mild allergic reaction. A change to beef liver was effective in the avoidance of an allergic reaction as long as the dose was kept small. A large dose produced a severe allergic reaction. Folic acid therapy was instituted with dramatic and satisfactory response. In order to obtain maximum erythrocyte and hemoglobin levels, dosages of dried stomach extract and iron and sodium citrate were added to that of folic acid. The patient has been rendered free of symptoms and maintained at an erythrocyte level of more than 4,000,000 per cubic millimeter, with more than 13 Gm. of hemoglobin per hundred cubic centimeters of blood. The period of observation extended over eighty days of folic acid therapy.

REPORT OF CASE

History.—Mrs. C. C. was admitted to the University Hospital on March 30, 1946 complaining of weakness and pain in the legs. For the past four years she had been receiving from her physician injections of liver extract at regular intervals for treatment of anemia. In November 1945 within fifteen minutes after she had been given an injection of liver extract, itching of the palms, edema of the face and tongue and dyspnea developed, and the patient soon became unconscious. Epinephrine was administered and she recovered, gradually returning to normal during the subsequent forty-eight hours. Parenteral injections of liver extract were then discontinued, and liver extract and ferrous iron were given by mouth. During the next four months her anemia became progressively worse, and she noted profound weakness.

For many years she had had varicosities of both legs. In September 1943 a localized, tender mass had developed in the left femoral region, which had been treated by rest in bed and by the application of ice bags to the affected part. During the month preceding this hospital admission she had been experiencing, at irregular intervals, sensations of substernal constriction of gradual onset, associated with faintness and profound weakness. There was, in addition, a sensation described as "bubbles" moving upward along the course of the veins of the legs, most noticeable at night in bed. Ten years ago she had undergone a hemorrhoidectomy. She had migraine for several years during early adult life and chronic constipation. Her past history was otherwise not relevant.

Physical Examination.—The patient appeared well nourished. The skin was a light lemon color; the hair was white. The general appearance was that of weakness and apathy. The tongue was pale and smooth, and the papillae were atrophic. The lips and oral mucosa were pale. There was sclerosis of moderate degree of the peripheral arteries. The blood pressure was 120 systolic and 60 diastolic. There was a soft systolic murmur at the cardiac apex. Dilated, tortuous, superficial veins were seen over the posterior, lateral and medial surfaces of both lower extremities, with one area of tenderness and increased heat over the medial aspect of the lower part of the left leg. The deep veins were found to be patent. Roentgenologic examination revealed that the heart was 17 per cent larger than the average normal with uniform widening of the aorta. Gastric achlorhydria was found. A proctoscopic examination did not reveal any abnormalities. Roentgenologic examination of the gastrointestinal tract showed slight herniation of the stomach through the esophageal orifice, a diverticulum of the jejunum and ptosis of the colon. Serial electrocardiograms showed only axis deviation to the left. Roentgenograms of the legs showed a slight degree of arteriosclerosis.

Hospital Course.—Since at the time of admission it was believed that the patient might be experiencing small pulmonary emboli, it was deemed advisable, in view of the physical observations and the past history of thrombophlebitis, to consider ligation of the veins of the legs. Dr. John W. Stewart saw the patient as a surgical consultant and recommended bilateral saphenous ligation. Accordingly, on April 1, 1946, two days after admission, the long saphenous veins on both sides were ligated at their junction with the femoral veins. The patient experienced postoperative shock, controlled by the administration of 1,000 cc. of whole blood. The accompanying chart

---

From the Department of Internal Medicine, St. Louis University School of Medicine, and the Medical Service of the St. Mary's Group of Hospitals.

[1] Schwartz, S. O., and Legere, H.: Treatment of Liver Extract Sensitivity, Blood **1**: 307, 1946.

[2] Spies, T. D.; Vilter, C. F.; Koch, M. B., and Caldwell, M. H.: Observations of the Anti-Anemic Properties of Synthetic Folic Acid, South. M. J. **38**: 707, 1945. Moore, C. V.; Bierbaum, O.; Welch, A. D., and Wright, L. D.: The Activity of Synthetic Lactobacillus Casei Factor ("Folic Acid") as an Anti-Pernicious Anemia Substance, J. Lab. & Clin. Med. **30**: 1056, 1945. Doan, C. A.; Wilson, H. E., Jr., and Wright, C. S.: Folic Acid (L. Casei Factor) an Essential Pan-Hematopoietic Factor: Experimental and *Clinical Studies, Ohio State M. J.* **42**: 139, 1946.

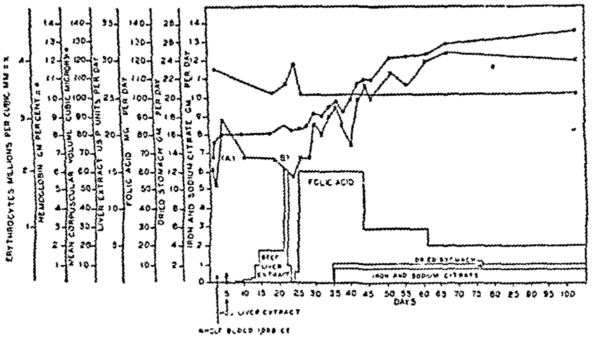
presents the antianemic medicaments used and the concomitant data on examination of the peripheral blood. It will be noted that liver extracts were at first administered in extremely small dosage, prepared by dilution of the original extracts.

COMMENT

This patient's type of anemia was macrocytic. The mean corpuscular volume determinations fell within a range between 118 and 102 cubic microns. The mean corpuscular hemoglobin concentration fell within a range between 32 per cent and 38 per cent. The presence of achlorhydria together with the absence of gross organic disease of the gastrointestinal tract or liver, and the history of an adequate dietary intake, justify by exclusion of other factors the diagnosis of addisonian pernicious anemia. It is of interest that the mean corpuscular volume and the mean corpuscular hemoglobin concentration have both remained at high levels at the termination of this period of observation, in spite of the absence of anemia.

Whole blood in the amount of 1,000 cc. was administered to combat postoperative shock. It will be seen from an inspection of the accompanying chart that this was followed by a sharp rise in the erythrocyte level, followed by a gradual decline. Three weeks later the erythrocyte count had declined to the pretransfusion level.

An extract of hog liver was administered in a single small dose (0.15 U. S. P. units). This was sufficient, however, to produce itching of the palms. It was probably a type of hog liver extract whose administration to the patient over a period of four years had eventually resulted in sensitization and shock, since most commercial liver extracts are hog liver preparations.



Response to various forms of treatment; *A*, allergic reaction, mild: itching of palms. *B*, allergic reaction, severe: itching of palms, vomiting, weakness and cold extremities, with persistence of symptoms for twenty-four hours.

Beef liver extract was administered over a period of fourteen days. This extract was well tolerated by the patient as long as the dosage was small; in fact, a dose of 2 U. S. P. units given twice a day did not produce allergic reaction, whereas 0.15 U. S. P. unit of hog liver had done so. However, when 15 U. S. P. units of beef liver was administered a violent shock-like reaction occurred. It is of interest that the erythrocyte count fell progressively during the fourteen days of beef liver therapy. A transfusion of 1,000 cc. of whole blood had been given one week before the administration of beef liver was started. A distinct rise in the red blood cell count and hemoglobin level was noted five days after folic acid therapy was begun and before dried stomach was added to the therapeutic regimen. The erythrocyte count had increased by more than 1,000,000 cells.

The exact role played by the dried stomach can not be properly evaluated. This preparation was administered, together with iron and sodium citrate, after the initial rise in the red blood cell count and hemoglobin level produced by the folic acid, when the erythrocyte count was greater than 3,000,000. In this case, unlike some of the other cases reported in which folic acid alone was administered, the response was maximal and sustained. The end result of this combination of folic acid, stomach extract and iron and sodium citrate was an entirely satisfactory increase in the number of erythrocytes to above 4,000,000 and in the production of hemoglobin to more than 13 Gm. per hundred cubic centimeters. It is noteworthy that the macrocytosis has persisted. The patient is now living a normal life and is free of those symptoms which were responsible for bringing her under observation. It is unlikely that liver extract, if tolerated, would have produced a more perfect result. It is probable that the disease would have terminated fatally had not treatment with folic acid and dried stomach been used.

SUMMARY

1. A case of macrocytic anemia with organ-specific allergy to liver extract is reported.

2. Administration of folic acid followed later by that of dried stomach and iron solved the serious problem of persistent allergy to liver extract and resulted in maximal and prolonged maturation of erythrocytes.

ADDITIONAL NOTE: The blood values after seven months of continuous medication with the same dosage were as follows: red blood cells, 4.25 million; hemoglobin, 12.75 Gm. per hundred cubic centimeters, and mean corpuscular volume, 90 cubic microns.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

THEOPHYLLINE ETHYLENEDIAMINE (See New and Nonofficial Remedies, 1946, p. 395).

The following dosage forms have been accepted:

H. E. DUBIN LABORATORIES, INC., NEW YORK

Aminophylline (Powder): 15 Gm., 113 Gm., and 454 Gm. bottles.

PREMO PHARMACEUTICAL LABORATORIES, INC., NEW YORK

Aminophylline (Powder): 28.35 Gm. and 113.39 Gm. bottles.

Tablets Aminophylline: 0.1 Gm. and 0.2 Gm.

Enerals Aminophylline: 0.2 Gm. Each tablet is enteric coated with a shellac-castor oil mixture.

Solution Aminophylline: Ampuls 0.25 Gm. in 10 cc. and 0.5 Gm. in 2 cc.

ZEPHIRAN CHLORIDE (See New and Nonofficial Remedies, 1946, p. 113).

The following additional dosage form has been accepted:

WINTHROP CHEMICAL CO., INC., NEW YORK

Zephiran Chloride Solution (Concentrate) 12.8%: 118 cc. and 3.79 liter bottles. A concentrated solution of Zephiran Chloride which may be diluted with water or isotonic salt solution before use.

Zephiran Tint: 1.81 Gm. vials, D and C red No. 39, for use in the preparation of colored Zephiran Chloride Solutions.

METHENAMINE (See New and Nonofficial Remedies, 1946, p. 176).

The following dosage form has been accepted:

E. S. MILLER LABORATORIES, INC., LOS ANGELES

Tablets Methenamine: 0.3 Gm.

SULFADIAZINE (See New and Nonofficial Remedies, 1946, p. 181).

The following dosage form has been accepted:

E. S. MILLER LABORATORIES, INC., LOS ANGELES

Tablets Sulfadiazine: 0.5 Gm.

MANNITOL HEXANITRATE (See New and Nonofficial Remedies, 1946, p. 336).

The following dosage form has been accepted:

THE SMITH-DORSEY COMPANY, LINCOLN, NEB.

Tablets Mannitol Hexanitrate: 30 mg.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - Chicago 10, Ill.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Eight dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, JANUARY 18, 1947

PLANNING FOR HEALTH

On January 3 Hon. Robert A. Taft, senator from Ohio, spoke over the facilities of the National Broadcasting Company on "A Republican Program." In the course of the address, which appeared later as "Extension of Remarks" in the *Congressional Record*, Senator Taft referred briefly to the place of health in the program. He said:

> So also in the health field we are proposing a program to assist the states and local governments in making their treatment of the indigent and medically indigent more systematic and complete We should encourage the formation of plans for voluntary health insurance to be available to those who wish to take it out. On the other hand, we strenuously oppose the Wagner-Murray-Dingell bill, which attempts to impose a complete system of compulsory sickness insurance on all the people in the United States. That plan would tax the people to raise four or five billion dollars a year to pour into Washington to be used by a federal bureau to pay all the doctors to give free medical care to all the people of the United States. It is not only a socialization of medicine but it is the federalization of medicine. No other measure before the American people proposes such a tremendous increase in the right of the federal government to interfere with the daily lives of the people. It flies in the face of every principle for which the Republican Party stands.

The language is direct; the principles are sound; the message is heartening!

In his message to the Congress on the state of the nation, President Truman indicated in vague generalities his belief in the desirability of better availability for medical care. Then on January 10 he sent to the Congress his budget and his message, in which he was somewhat more explicit. He said:

> Recent legislation for hospital construction, for increased activities in mental health and for expanded maternal and child health services are substantial achievements toward improving the substandard health level of a large part of the population. But the major problem of financing health care still persists. Therefore I again urge the Congress to enact a health insurance program which will make adequate medical care available to every one and provide protection against the economic hardships of sickness. Such a program should be almost entirely self financing through payroll contributions.

Last year the President carefully explained several times that he did not believe this program to be "socialized medicine." That excursion into semantics was of little avail in convincing the American people. Now taxes are referred to pleasantly as "payroll contributions." Moreover, the medical care of all the people by a bureaucracy is characterized as "health insurance." Isn't it really "federalized medicine"?

On January 10 also Senator J. William Fulbright, Democrat of Arkansas, for himself and Senator Robert A. Taft, Republican of Ohio, introduced a proposal for a new Department of Health, Education and Security in the Cabinet. This proposal would put all health, social security and educational functions of the government under supervision of a new Cabinet officer. Already conferences are being developed in which representatives of various national organizations concerned with these functions in our civilization will meet to interchange views on the principles which should prevail in the establishment of such an agency and on the qualifications of the personnel selected to administer the services. The proposal would seem to be a much needed step toward assembling the medical functions of the federal government in a single agency with direct access to the Cabinet. This is a principle for which the American Medical Association has contended since its organization one hundred years ago. The fact that President Truman suggested its adoption in his message this year and that the proposal comes under joint sponsorship of both major political parties would seem to indicate likelihood of early enactment.

In his message President Truman referred also to the desirability of legislation in behalf of the establishment of a National Science Foundation. At a recent meeting of the American Association for the Advancement of Science, leaders in many fields of science, including medicine, proposed early conferences with a view to improving on the text of the Kilgore-Magnuson bill, which passed the Senate last year. On this subject Senator Taft said recently:

> We are also proposing a measure to set up a permanent scientific foundation to promote research in many fields. Our measure creates a scientific council of fifty leading scientists to select the director and determine the scope of the work. This is a substantial modification of the Kilgore-Magnuson bill of the last session, which authorized the President to appoint a director with fifteen bureau chiefs and an elaborate organization, directly subject to political pressure.

Here again there would appear to be a desire to give government back to the people!

In concluding his message Senator Taft said:

> In every field they will invite counsel from the best minds, initiate studies and recommend measures for future enactment.

Physicians who have fought unceasingly in behalf of the fundamental principles of freedom in the intimate affairs of our lives and in the further advancement of medical science, which has reached, under our system of government, the highest level ever attained anywhere in the world, will read in these words a promise of success for our objectives. Physicians know the importance of unimpeded respiration for health and vitality. Apparently we may—at least for a time—breathe easier.

VAGOTOMY FOR PEPTIC ULCER

Animal experiments in which a Pavlov or Heidenhain pouch was utilized have demonstrated that pure gastric juice has an aggressive action on living tissue as contrasted with that of the usual gastric content. The composition of the material in the stomach is usually a mixture of swallowed food and saliva, gastric juices from the parietal cells of the fundus, a mucous and a neutral or faintly alkaline secretion from the pyloric antrum and varying quantities of regurgitated duodenal juices. This material is relatively inert. Carlson demonstrated that a continuous gastric secretion occurs which is not dependent on the presence of food. Its small volume permits its neutralization by the mucus of the pyloric antrum, swallowed saliva and possibly also regurgitated duodenal contents. Dragstedt[1] suggests that this neutralizing mechanism may fail or prove inadequate and that, as a result, more or less pure gastric juice may accumulate in a stomach empty of food. Artificially induced, continued excessive secretion of gastric juice following implantation of histamine pellets in wax produced ulcers in all the common laboratory animals.

Acting on the concept that the hypersecretion of gastric juice in gastroduodenal ulcer is largely neurogenic, Dragstedt treated a series of patients who were troubled with more or less intractable gastroduodenal ulceration by utilizing an operation designed to remove permanently and as completely as possible the vagus innervation of the stomach. Incomplete vagotomies performed in the past (Weinstein, Winkelstein) have not been followed by a beneficial therapeutic effect. The desirability of a complete vagotomy was indicated by the studies of Hartzell, who demonstrated in dogs that section of both nerves decreases the acidity of the gastric contents. If the section is technically incomplete, the effect is disappointing. Experiments confirming and extending these observations were performed by Dragstedt and his associates on animals with totally isolated stomachs, both with and without vagal innervation.

Thornton, Storer and Dragstedt,[2] in reporting the results of intrathoracic vagotomy on 38 patients with duodenal, gastric or gastrojejunal ulcer, state that the postoperative course indicated complete relief of ulcer symptoms, objective evidence of healing of the ulcers and definite improvement in general health in almost all. The average twelve hour continuous secretion obtained in 8 patients with duodenal ulcers and in 2 patients with gastric ulcers before the vagotomy amounted to 821 cc., and this decreased to 335 cc. after division of the vagus nerves. The free acidity was 47 clinical units before and fell to 15 units after the operation. Histamine stimulation produced an abundant secretion of acid gastric juice in 19 patients thus tested before operation, and there was no diminution either in volume or in free acidity after the vagus section. This lack of response parallels the experiments on animals and is explained by the fact that histamine acts on the peripheral neuroglandular apparatus or directly on the secreting cells and not through the mediation of the vagi. Of 15 patients submitted to the insulin test, 14 were not affected by insulin following vagotomy. A decrease in the gastric tonus and in the frequency and amplitude of the hunger contractions was present in each case.

Excessive, continuous secretion of gastric juice occurs in most patients with gastroduodenal ulcer in the absence of any known type of gastric secretory stimulus. The reduction in this secretion produced by complete division of the vagus nerves to the stomach proves that the hypersecretion is neurogenic in character. The most pronounced and regular departure in these cases from the normal lies in the volume and acidity of the continuous night secretion. This is apt to be especially large in young people with duodenal ulcer who present in varying degree other signs of nervous tension and instability.

Grimson[3] subjected 18 patients with refractory ulcers that had produced serious symptoms during an average time of eleven years to intrathoracic vagotomy. The ulcers healed in several weeks. Twelve hour night secretion volumes were reduced from an average of 946 cc. before operation to an average of 342 cc. after operation. The acidity of the secretion of the fasting stomach was changed from an average p_H of 1.72 before operation to an average of 3.55 afterward. Insulin hypoglycemia produced an average maximum increase of free acid to 105 cc. before operation and to 23 cc. several weeks and several months afterward. Gastrometric examination revealed a remarkable reduction to subnormal of the gastric hypermotility observed before operation.

Fifteen patients were selected by Moore and his associates[4] because of the long duration and intractability of the symptoms of intractable peptic ulcer as well as the past and present complications. All the patients had had one or more rigorous terms of hospital medical treatment. Following transthoracic vagotomy the patients were allowed to eat and drink anything they wished, including alcohol and coffee, since it was believed that the operation would not be put to an adequate test if the patient continued rigid medical therapy. The ulcers of 12 patients have healed or are healing, and all but 1 patient had immediate and sustained symptomatic relief. There have been no surgical complications such as empyema, persistent pneumothorax or cardiospasm. This procedure is particularly applicable, in the opinion of these authors, to patients who have had other surgical interventions, such as pyloroplasty, posterior gastrojejunostomy or gastric resection and who present themselves with renewed ulceration. The largest group in which this procedure seems of value are young or middle aged patients with a long history of peptic ulceration, possibly with previous perforations or hemorrhages, unobstructed and not acutely bleeding, who have been refractory to medical treatment and who have severe ulcer pain in times of stress, which can be relieved transiently by the usual antiacid, milk or food. The operation is contraindicated in acute perforation, acute massive hemorrhage or advanced cicatricial obstruction.

---

[1] Dragstedt, L. R.: Pathogenesis of Gastroduodenal Ulcer, Arch. Surg. **44**: 438 (March) 1942.

[2] Thornton, T. F., Jr.; Storer, E. H., and Dragstedt, L. R.: Supradiaphragmatic Section of the Vagus Nerves, J. A. M. A. **130**: 764 (March 23) 1946.

[3] Grimson, K. S., in discussion on preceding paper, p. 769.

[4] Moore, F. D.; Chapman, W. P.; Schulz, M. D., and Jones, C. M.: Transdiaphragmatic Resection of the Vagus Nerves for Peptic Ulcer, New England J. Med. **234**: 241 (Feb. 21) 1946.

The period of observation has been too short to permit a final evaluation of the method, and the question of ultimate regeneration of the divided vagi remains undecided. Such complications as dilatation of the stomach and greatly impaired motility make necessary delay in final conclusions regarding the exact value of the technic.

WATCH THE ANTIVIVISECTIONISTS

State legislators are meeting in 1947 in forty-four states. In some of these legislatures bills will be introduced by the antivivisectionists seeking curtailment of the use of animals in research. The possible crippling of medical progress, medical education, manufacture of pharmaceuticals and standardization of drugs for therapeutic use as a result of their efforts does not concern the antivivisectionists. Unless they are effectively inhibited they may come even more perilously close to success than they did in the legislative session in New York when their dog bill passed one house of the legislature. Only the vigilance of New York physicians and scientists succeeded in stopping them.

The annual report[1] of the National Anti-Vivisection Society, 37 South Wabash Avenue, Chicago, contains a copy of a letter which is being sent to approximately 13,000 state legislators individually typed and signed by Ward Caille, the vice president. Accompanying the letter will be a postcard, return envelop and a copy of a booklet, "The Case Against Vivisection," which is an alleged refutation of a powerful article in *Collier's*,[2] which established beyond doubt the necessity for using animals in research.

In this letter there is the usual medley of misstatements. Claim is made that in the membership of the National Anti-Vivisection Society "there is a percentage of licensed physicians ten times greater than the percentage of physicians in the whole American population, and for reasons they well understand only a few of these doctors deem it wise to allow us the use of their names." This is statistical hocus-pocus which tells exactly nothing; the membership rolls of the National Anti-Vivisection Society have never been open to inspection.

The Anti-Vivisectionists' letter admits that "torture of animals" can exist only by nonenforcement of anticruelty laws but does not explain the persistent reluctance of the antivivisection societies to invoke such laws, nor does it mention the ignominious court reverse sustained by them in Chicago on one of the few occasions when they were unwise enough to venture into prosecution.

The letter pretends "we need to know for our own guidance how legislators as a class feel" and "legislators are second only to doctors in their importance and interest to us." It closes with a request for a personal favor to check the "enclosed card and seal it in the enclosed return envelop. As pointed out above, your signature is entirely optional." Following is a reproduction of the card:

I am (for) (against) the vivisection of animals.

IF "AGAINST," PLEASE GO ON TO CHECK ONE OR MORE OF THE STATEMENTS BELOW

☐ Unfortunately, I would not vote for anti-vivisection legislation now because I feel such action would be premature.

☐ I would support anti-vivisection legislation with my vote, at present, but only with my vote.

☐ I would support anti-vivisection legislation by both my vote and the influence of my publicly expressed opinion.

☐ I would support anti-vivisection legislation by any means, deeming it right and considering it important enough not to be submerged by other political problems.

This is an old dodge in a new dress. It was tried on the medical profession some years ago. Questionnaires sent to physicians resulted in approximately 3,600 replies, which represents just about 5 per cent of the profession. In this 5 per cent would naturally be included all the proponents of the antivivisectionist movement, but even so these constituted only a bare majority of physicians replying. Nevertheless this so-called "poll" has been widely quoted as an indication that doctors favor the activities of the antivivisectionists against medical research.

This legislative poll, it may safely be predicted, will be used as the medical poll was used. No matter how small the number of legislators who reply, the proponents will quite likely constitute a majority, since most recipients of the questionnaire will file it in the wastebasket. The false "majority" thus engineered by questionable statistical practices will be widely publicized as representing the "attitude of legislators" toward antivivisectionists.

---

1. Annual Report, National Anti-Vivisection Society, Dec. 31, 1946.
2. Kirk, N. T., and Ratcliff, J. D.: Mice or Men? Collier's, June 29, 1946.

The antivivisectionists distributed over 2,000,000 pieces of literature in 1946. "Every state in the Union was covered and in some instances entire towns were blanketed." They have lists of dog licenses, and their members send them names copied from local telephone books.

Unless the medical profession and allied scientists and educators are alert we may yet see science humiliated by the enactment of crackbrained legislation.

Current Comment

1,646 SUCCESSFUL VACCINATIONS ON A TROOP SHIP

Ten days out from Suez on a troopship bound for New Zealand,[1] a man was admitted to the hospital with a diagnosis of acute tonsillitis. Two days later a papular rash appeared; on the following day the rash increased with a tendency to coalesce over the face, shoulder, upper arm and other areas. Next day the papules showed gray-white tops; some were umbilicated, and there was further coalescence. The patient now was drowsy and confused. The eruption progressed until only five small areas of clear skin remained through which to pass a hypodermic needle. At a consultation of medical officers on board, on the fifth day, the consensus was that this was a case of smallpox. On the twelfth day the patient died. Vaccination scars were not found on his skin. He had never been successfully vaccinated in the Army. Investigation showed that he had been A. W. O. L. before embarkation and had been picked up in the most doubtful part of an out of bounds area. When smallpox was suspected, all contacts were vaccinated and the ship's company was revaccinated. The amazing result was a total of 1,646 successful vaccinations. Precautions taken to prevent the introduction of smallpox into Australia, where some of the troops disembarked, and into New Zealand apparently were adequate. Palmer states that the population in New Zealand is virtually unprotected. Its medical practitioners, however, fully realize, as physicians do everywhere, that successful vaccination is the only sure means of preventing an outbreak of smallpox. If their fellow countrymen also were convinced, public opinion would force army authorities to see that their soldiers were immunized against this disfiguring and often fatal disease. A few cases of serious and even fatal smallpox occurred in the United States Army during the recent war. These are believed to have been due, however, not to failure to vaccinate but to failure to vaccinate properly and to interpret the results correctly. Now comes a recent report that 820 cases of smallpox occurred in Hong Kong in November and that 530 cases were fatal. Civilians should be urged to have successful vaccination against smallpox. The hazard is especially important for those who travel.

EUPHEMISMS AND EQUIVALENTS IN TEACHING AND PRACTICE

While the education of the public in medical matters is desirable, certain factors inevitably associated with the process produce undesirable effects, particularly in neurotic and suggestible persons. The increasing flow of medical information given to the public through the press and the radio makes persons aware of the seriousness of certain diseases and arouses dread in the apprehensive that they may become victims of some of these conditions. If this leads, as it frequently does, to prompt consultation with a physician when dubious symptoms arise, the effect is highly desirable. Unfortunately, unduly apprehensive people may not be reassured even by a favorable report, and others often fail to consult a physician. The printed page and the radio broadcast are not the only, or even the chief, sources of education of the public in medical matters. The physician, both as practitioner and as teacher, bears a heavy responsibility in this field. The treatment of many diseases is much more efficient when the patient is informed of the underlying principles. However, in the instruction of patients discretion and tact on the part of the physician are essential. The use of terms which are ominous or even terrifying must be avoided. This is best done by the use of euphemisms, which the dictionary defines as "mild or agreeable expressions for something disagreeable." The teacher of medicine, particularly in bedside instruction, is in a position to do considerable harm if he fails to select his language with care. It is customary on teaching rounds and in bedside clinics for a student to recount the history of the patient. If this is not done intelligently a nervous patient may be frightened almost out of his senses. In the subsidiary questioning too both the questions and the answers should avoid terms which are of grave import to the average layman. After the history has been elicited and the pertinent observations have been demonstrated, the diagnosis should not be discussed before the patient. Medical students must be instructed in the principles discussed and must be given a working knowledge of the use of euphemisms and equivalents. Patients with a history of syphilis may be reported as luetics, those having positive Wassermann tests may be described as having positive complement fixation tests. In cases of angina pectoris the disease may be discussed with students in the presence of the patient as stenocardia. Patients with this disease may be told that they are suffering from spasm of the heart arteries or attacks of anoxemia of the heart muscle. In like manner neoplasm, without the qualifying adjective malignant, may be used to describe carcinomas and other growths. Excessive addiction to alcohol may be spoken of as ethylism. These are but a few examples of the many euphemisms or equivalents that may be used. This whole question is bound with the ancient but newly stressed conception of disease as involving not only the soma but the psyche, an idea not usually grasped in its full implication by the medical tyro but borne in on the practitioner with cumulative force as his experience increases.

---

[1] Palmer, G. B.: Confluent Smallpox; Report of a Case, New Zealand M. J. 45:249 (Oct.) 1946.

ORGANIZATION SECTION

Washington Letter

(From a Special Correspondent)

Jan. 13, 1947.

President Asks for Broadened Health Program and Social Security

President Truman informed the Republican 80th Congress in his state of the Union message of his labor proposals and desire for cooperation. His legislative plans contained a comprehensive national health program and broadened social security. Mr. Truman also advocated the creation of a Department of Welfare to handle health, education and welfare. "Of all our national resources," he stated, "none is of more basic value than the health of our people. Over a year ago I presented to the Congress my views on a national health program. The Congress acted on several of the recommendations of this program—mental health, the health of mothers and children and hospital construction. I urge the Congress to complete the work begun last year and to enact the most important recommendation of the program—to provide adequate medical care for all who need it, not as charity, but on the basis of payments made by the beneficiaries of the program."

Physician Veterans Want Hospitals to Employ Doctors with Military Service

The Physician Veterans of World War II, known here as the "Docvets," protested to the Surgeons General of the Army and Navy against a deferment policy whereby recent medical graduates can obtain a deferment if they present letters from hospitals saying they have jobs as residents. A spokesman said "We believe such jobs should go to competent physician veterans." Navy Surgeon General Swanson promised that no deferment because of hospital residency would be granted if a physician veteran can take the job. Army Surgeon General Kirk explained that 3,000 medical school graduates whose tuition was paid by the government are available for army service. The Army can't use them now, which is the reason for deferments. The Docvets applauded General Kirk's comment that hospitals should employ veterans rather than younger doctors without military service.

Rh Blood Laboratory Set Up in Capital

Two doctors who served in the Army Medical Corps during the war in laboratory blood testing and blood bank work plan are setting up a central laboratory to make Rh blood available to Washington mothers. They are Dr. Oscar B. Hunter Jr., son of Dr. Oscar B. Hunter, secretary-treasurer of Doctors Hospital and a governor of the new Congress of American Pathology, and Dr. John Ross, son of Charles G. Ross, White House press secretary.

Representative Lemke Revives Bill to Outlaw Vivisection

Representative Lemke, Republican of North Dakota, has reintroduced his bill to outlaw medical experiments on living dogs in the District of Columbia. The measure has been defeated in past sessions. The bill would make it a misdemeanor to experiment or to perform any operation on living dogs except those normally performed for the convenience of the owner and "welfare and curing" of the animal. The bill was referred to the House District Committee.

Health and Welfare Stressed in Economic Report

In his economic report to Congress, President Truman advocated increased old age benefits and survivors' insurance under Social Security and extended aids to the blind and dependent children beyond 1947. The boost in Social Security benefits was asked to meet rising living costs. Also recommended was long range revision of social security laws to increase the amount and duration of unemployment benefits, sickness and disability insurance for workers and partial federal financing of the Social Security system. Mr. Truman said "Health insurance relates clearly to the efficiency of workers and thus to the productivity of industry and agriculture. And this is even true of education, which must be reshaped continuously to meet the changing demands and job opportunities of the machine age or, some day, of the atomic age."

National Health Insurance Law Slated for Consideration by New Congress

Senator Smith, Republican of New Jersey, announced that he would launch a Republican drive for enactment of a national health insurance law early in the new Congress. His plan would provide voluntary participation, with each state to work out its own insurance program for hospital and medical care. He advocates a $200 million federal fund from which aid could be supplied to help low income groups. The proposal differs considerably from the administration's compulsory insurance plan which failed to win enactment at the last session. "We want to give the greatest measure of freedom to the states in setting up their health insurance plans," explained Senator Smith. His bill would create a council to which a state could appeal any dispute over proposed grants-in-aid, which would be on the basis of $2 in federal funds for every $1 paid by the state. Senator Smith is on the committee which will report on a health program for the Senate Republican members.

Swedish Hospital Is Model for Washington's New Hospital Center

W. E. Reynolds, U. S. public buildings administrator, has returned from a European trip with enthusiastic reports about Stockholm's new Soder Hospital, built during the war, which is said to be the only permanent, modern and complete hospital equipped for all specialties of medicine. It has been suggested as a model for the $20 million hospital center. The Stockholm plan, if adopted, would have to be modified to conform to the fact that Emergency, Garfield and Episcopal hospitals, to be merged in the new center, must maintain their identities to preserve endowments and other assets. The Stockholm hospital is municipally owned and has small emergency receiving stations located in large areas. Planes, ambulances, motorboats and trains are used to speed patients needing specialized treatment to large hospitals.

President Comments on Need for Continued Research and Patents

President Truman explained in his Economic Report his recent action to stimulate research, stating "The United States will this year invest more than a billion dollars in research. In order to protect national security and the development of the domestic economy I have established by executive order a presidential research board to survey federal research and development programs. The continuation of a research program of large magnitude for many years to come, together with the fact that many of the inventions resulting from it will be patentable, calls for action to protect the public interest in inventions and discoveries resulting from expenditures of public funds."

National Science Foundation Nearer Reality by Boston Resolution

Advocates of a National Science Foundation believe that this project is nearer realization than ever before as a result of the resolution adopted by the policy council of the American Association for the Advancement of Science in Boston. An intersociety committee was formed to press for legislation to create such a foundation. Dr. Kirtley F. Mather, chairman of the committee, and Dr. Harlow Shapley, new president of the association, stated that the Kilgore-Magnuson bill, passed last year by the Senate only to die in House committee, would be satisfactory if enacted by the 80th Congress. The resolution stated that "the creation of a National Science Foundation to support fundamental scientific research and the education of scientists is of utmost importance for the health, security and welfare of the nation."

Liberated Japan Adopting Startling Program of Eugenics

Copies of the *Nippon Times* of Tokyo of November 6 reaching Washington officials reveal that liberated Japan, through its Population Policy Commission, is about to adopt a program of eugenics which American newspaper commentators say bears resemblance to programs enforced by Hitler. The Japanese plan makes no mention of Nordics or non-Nordics but refers to "qualified" and "unqualified" parents. For the latter, sterilization and compulsory castration are proposed. Another feature "to control births and produce a better race" includes abortion "to protect the health of the mother or for ethical reasons, such as "conception due to rape, error or ignorance."

War Department Seeks Adoption of Universal Military Training

Although President Truman has advocated dropping the word "military" from his proposed program of national youth training, the War Department will endeavor to have this economy minded Congress adopt its program of universal military training. An official statement points out that the whole cost of universal military program for one year would cost less than three days of the second world war, $800 million. The War Department points out that a civilian commission would control the program, which would emphasize physical and religious development.

Dr. Albert F. Woods to Continue Research in Plant Disease Viruses

On his retirement December 31 as educational adviser of the Department of Agriculture, Dr. Albert F. Woods, a veteran of fifty years with the department, plans to resume research into plant disease viruses which he began in 1895. He is working on the theory of William Stanley, discoverer of the tobacco mosaic virus, that such entities are chemical rather than organic. His research would bear on why certain virus diseases do not yield to drugs, as do bacteria. It is pointed out that there is a close link between viruses and certain types of cancer, such as skin cancer.

Creation Urged of Single Department of National Defense

Merger of the armed forces, long contested in Congress, is on the agenda of the 80th Congress for further consideration. President Truman in his message advocated a single Department of National Defense to cut costs and enhance national security. He also appealed for universal training to develop a trained citizens' reserve. The President also called for extension of Selective Service only if the War Department finds that it is necessary to maintain the strength of the army. The War Department is to report in time for Congress to act. Present draft laws expire March 31.

Senator Langer Advocates Maternity Leave for Federal Worker

Senator Langer proposes to introduce a bill granting women who have at least one year's federal service the right to maternity leave of sixty days. The bill is being prepared by officials of the Federal Security Agency and the Women's Bureau of the Department of Labor. A similar bill failed to pass Congress last year.

President Truman Appeals for March of Dimes

President Truman asked for national support of the annual March of Dimes, January 15 to 30, to finance the fight against infantile paralysis. He will broadcast to the nation on the night of January 30, the sixty-fifth birthday anniversary of the late President Roosevelt, founder of the National Foundation for Infantile Paralysis.

Dr. Calvin Klopp Is Director of Cancer Prevention Clinic

The first cancer prevention clinic to be opened in the District of Columbia is in the Warwick Cancer Clinic at Garfield Memorial Hospital, in charge of Dr. Calvin Klopp. Findings indicative of cancer will be reported to the subject's family or physician. Dr. Klopp explains that the clinic "will make periodic examinations of well people who want to find out if they have cancer and don't know it."

Dr. Bush Is 1946 Winner of Hoover Medal

Dr. Vannevar Bush, president of the Carnegie Institution of Washington, has been named 1946 winner of the Hoover Medal, one of the coveted honors of the engineering profession. It is the most recent of the many awards and honorary degrees conferred on him.

Navy Nuclear Scientist Named to Presidental Board

Dr. Philip N. Powers, navy nuclear physicist, has been appointed to President Truman's Scientific Board. He will serve as assistant coordinator of scientific personnel.

Medical Legislation

MEDICAL BILLS IN CONGRESS

Department of Health, Education and Security

Senator Fulbright, Arkansas, for himself and Senator Taft, Ohio, has introduced S. 140, a bill to create an executive department of the government to be known as the Department of Health, Education and Security. This legislation would authorize the appointment by the President of three undersecretaries in the department, an undersecretary for health, an undersecretary for education and an undersecretary for security. The undersecretary for health, the bill provides, must be a doctor of medicine licensed to practice medicine and surgery in one of the states or territories of the United States or in the District of Columbia, and will perform such duties concerning health as may be prescribed by the secretary of the department or required by law.

Department of National Health

Representative Miller, Nebraska, has introduced H. R. 605, a bill to establish a Department of National Health at the head of which shall be the secretary of national health, appointed by the President *by and with the advice and consent of the Senate.* The declared purpose of this legislation is to bring about, so far as practicable, a centralization in the Department of National Health of all activities of the federal government relating to health. The President will be required, as soon as practicable after the enactment of the bill, to transfer by executive order from existing departments, agencies and offices of the government, to the Department of National Health, such agencies and functions as he may determine to be appropriate to carry out the declared purpose.

Coming Medical Meetings

Annual Congress on Medical Education and Licensure, Chicago, Palmer House, Feb. 10-11. Dr. Victor Johnson, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Orthopedic Surgeons, Chicago, Jan. 25-30. Dr. Myron O. Henry, 825 Nicollet Ave., Minneapolis, Secretary.

Central Surgical Association, Chicago, Feb. 20-22. Dr. Walter G. Maddock, 250 East Superior St., Chicago, Secretary.

Chicago Medical Society Annual Clinical Conference, Chicago, March 4-7. Dr. Willard O. Thompson, 30 N. Michigan Blvd., Chicago 2, Secretary.

Mid-South Postgraduate Medical Assembly, Memphis, Tenn., Feb. 11-14. Dr. Arthur F. Cooper, 1479 Carr Ave., Memphis, Secretary.

New Orleans Graduate Medical Assembly, New Orleans, Feb. 24-27. Dr. Max M. Green, 1430 Tulane Avenue, New Orleans 13, Secretary.

Pacific Coast Surgical Association, Seattle, Feb. 17-18; Victoria, B. C., Feb. 19-21. Dr. F. L. Reichert, Stanford University Hospital, San Francisco, Secretary.

GOVERNMENT SERVICES

ARMY

406th MEDICAL GENERAL LABORATORY IN TOKYO

One of the organizations that assist in safeguarding the health of our occupation forces in Japan is the 406th Medical General Laboratory in Tokyo, which has now been fully staffed and equipped with 20 medical officers, 50 enlisted men, 5 Japanese doctors and 40 Japanese laboratory technicians and helpers. Field teams traveling about Japan in special laboratory cars gather scientific data, which are correlated and interpreted by the laboratory. Some field teams, for example, collect specimens of blood from people and animals in representative areas, as a basis of comparison and further study, in case an outbreak of Japanese B encephalitis should occur. One of the larger projects the laboratory has taken over is the research begun by the Commission on Virus and Rickettsial Diseases on B encephalitis. The laboratory does such routine procedures as examination of surgical tissue removed at operation and various kinds of blood tests. About 5,000 white mice are used each week in the various tests and experimental work. The laboratory analyzes daily the water supply in the Tokyo-Yokohama area and examines certain food products, such as ice cream, used by soldiers throughout Japan. Most of the routine testing of foods and drugs consumed by Allied personnel is carried out in this army installation, which is the only one of its type in Japan. The commanding officer of the laboratory is Lieut. Col. W. D. Tiggertt.

MEDICAL OFFICERS ATTENDING VENEREOLOGY CLASSES

Major Gen. Norman T. Kirk, the Surgeon General, announces that sixteen selected officers of the Army Medical Department have enrolled in the first postwar classes in venereology at a civilian institution opened in December at the University of Pennsylvania. Such courses have become necessary, General Kirk said, to replace those venereal disease specialists who are being separated from the service, and while this abbreviated course "will not give us specialists in venereal disease management, it will be a step in the right direction." These sixteen officers will study at the Institute for the Study of Venereal Disease at the University of Pennsylvania and at the conclusion of the course will return to their stations in army general hospitals. The course is conducted by Dr. John H. Stokes, director of the institute and medical consultant to the Secretary of War through the Surgeon General.

Another class is scheduled to open in January at the University of Southern California, Los Angeles.

ARMY MEDICAL LIBRARY

A permanent office for the Association of Honorary Consultants to the Army Medical Library has been opened in room 26, Library of Congress, Washington, D. C., where all matter pertaining to the association should be sent.

Mr. Scott Adams, formerly chief of the acquisition division of the library, has been appointed acting librarian to replace Mr. Wyllis Wright, who is leaving to become librarian of Williams College, Williamstown, Mass.

CONFERENCE ON VENEREAL DISEASE CONTROL

At a conference on venereal disease control at the New Grand Hotel, Yokohama, Japan, Dec. 4, 1946 opening remarks were presented by Lieut. Gen. Robert L. Eichelberger, commanding general, Eighth Army, and Col. Philip L. Cook, M. C., surgeon, Eighth Army. Col. G. N. Schuhmann, M. C., also of headquarters, Eighth Army, outlined the purpose of the conference. Lieut. Col. J. S. Smith, Inf., commanding officer West Camp, Kobe Base, discussed development of the hospital annex and the method of venereal disease control in use at the base, and Capt. J. E. Harroun, M. C., Surgeon's Office, Yobas, studies of venereal disease in Yobas. Other speakers were Lieut. A. H. Randelman, M. C., venereal disease control officer, and Dr. O. M. Elkins, consultant in venereal disease control, G.Hq. S. C. A. P.

VETERANS ADMINISTRATION

OSTEOPATHS TO SERVE IN VETERANS ADMINISTRATION

The Veterans Administration, Washington, D. C., announces that arrangments have been completed for the appointment of doctors of osteopathy to serve in the Veterans Administration, department of medicine and surgery. The appointments will be made in compliance with Public Law 293 (79th Congress), which authorizes the Veterans Administration to hire doctors of osteopathy to work with veterans. To be eligible a doctor of osteopathy must be a citizen of the United States, hold a degree of osteopathy from a college or university recognized by the Veterans Administration, hold a license to practice osteopathy in one of the states, territories or the District of Columbia, have completed an internship satisfactory to the Veterans Administration, and meet prescribed physical standards.

RESIDENCY TRAINING IN NEUROLOGY

Additional residency training programs for Veterans Administration physicians interested in neurology have been organized. The residencies, which will vary from one to three years, are designed to prepare residents for certification in neurology by the American Board of Psychiatry and Neurology.

One training program will be conducted under the joint auspices of Boston University, Tufts Medical College and Harvard University. Residents will be stationed at the Veterans Administration hospital at Framingham, Mass., which has special units for the study of epilepsy, aphasia, paraplegia and electroencephalography and a complete diagnostic neurologic service. Applications should be sent to Dr. Harry C. Solomon, chairman, Deans Subcommittee for Neuropsychiatry, Harvard Medical School, Boston.

The other training program will be conducted at Jefferson Medical College and Clinic, Philadelphia, under the auspices of the Veterans Administration Philadelphia Deans Committee. Dr. Bernard J. Alpers, professor of neurology at the Jefferson Medical College, will direct the program. Applications should be sent to Dr. Edward A. Strecker, chairman, Deans Subcommittee for Neuropsychiatry, University of Pennsylvania School of Medicine, Philadelphia.

Other medical schools affiliated with the Veterans Administration for residency training in neurology where training programs are already under way, are:

Medical School	VA Hospitals and Clinics	Applications Received by
Cornell University Columbia University	Bronx, N. Y. Hospital	Dean Willard C. Rappleye, 630 W. 168th St., New York
Northwestern University University of Illinois	Hines, Ill., Hospital	Dr. Lewis J. Pollock, Northwestern University, Chicago
University of Minnesota	Minneapolis	Dean Harold S. Diehl, University of Minnesota

PUBLIC HEALTH SERVICE

ORGANIZATION FOR NATIONWIDE MEDICAL RESEARCH

The Congress of the United States has designated the National Advisory Health Council, the National Advisory Cancer Council and the National Advisory Mental Health Council to make recommendations to the Surgeon General, U. S. Public Health Service, regarding means necessary to carry out his responsibilities (Public Law 410 section 301, 78th Congress, and Public Law 487, section 7, 79th Congress) with respect to the use of funds for research. In order to provide these advisory councils with expert advice on applications for research grants, the Public Health Service has organized nineteen special study sections, consisting mostly of civilian scientists, in surgery, pathology, public health methods, pharmacology, tropical diseases, antibiotics, bacteriology, biochemistry and nutrition, cardiovascular diseases, gerontology, hematology, malaria, metabolism and endocrinology, physiology, radiobiology, sanitation, syphilis, virus and rickettsial diseases and dental subjects.

Research projects approved by these councils will receive grants in aid. Applications for grants may be made by schools of medicine, hospitals, public or private institutions and individuals. The plan inaugurated by the Public Health Service calls for complete academic freedom and unrestricted opportunity to carry on productive research.

At a recent meeting of the study Section on Metabolism and Endocrinology, Dr. Joseph H. Barach of the University of Pittsburgh was elected chairman. The other members of this section are:

Dr. Charles H. Best, University of Toronto.
Dr. Jerome Conn, University of Michigan.
Dr. Herbert M. Evans, University of California.
Dr. Roy Hertz, National Institute of Health, Washington, D. C.
Dr. F. D. W. Lukens, University of Pennsylvania.
Capt. W. F. Loftin, United States Navy.
Dr. Alexander Marble, Baker Clinic, Boston.
Col. Charles R. Mueller, United States Army.
Dr. Henry B. Mulholland, University of Virginia.
Dr. Lester J. Palmer, Mason Clinic, Seattle.
Dr. Elaine P. Ralli, New York University.
Dr. Henry T. Ricketts, University of Chicago.
Dr. Randall G. Sprague, Mayo Clinic, Rochester, Minn.
Dr. Cecil Striker, Cincinnati.
Dr. Hugh L. C. Wilkerson, executive secretary, U. S. Public Health Service, Washington, D. C.

STATE AGENCIES TO ADMINISTER HILL-BURTON ACT

Forty-three states and territories have designated agencies to administer the Hospital Survey and Construction Act. According to the U. S. Public Health Service, communities, hospitals and professional groups wishing to participate in the program should direct their inquiries to the appropriate state or territorial agency named in the following list:

Alaska	Territorial Department of Health, Juneau	Dr. C. Earl Albrecht Commissioner of Health
Arizona	State Department of Health Phoenix	Dr. G. F. Manning Supt. of Public Health
Arkansas	State Board of Health Little Rock	Dr. T. T. Ross State Health Officer
California	State Dept. of Public Health San Francisco	Dr. Wilton L. Halverson Director of Public Health
Connecticut	State Department of Health Hartford	Dr. Stanley H. Osborn Commissioner of Health
District of Columbia	D. C. Health Department Washington	Dr. George C. Ruhland District Health Officer
Florida	Florida State Improvement Commission, City Administration Building, Tallahassee	Mr. C. H. Overman Director
Georgia	Georgia Department of Public Health, Atlanta	Dr. T. F. Abercrombie Director of Public Health
Hawaii	Territorial Board of Health Honolulu	Dr. C. L. Wilbar, Jr. President, Board of Health
Idaho	Idaho Dept. of Public Health, Boise	Mr. L. J. Peterson, Acting Administrative Director
Illinois	State Dept. of Public Health, Springfield	Dr. Roland H. Cross Director of Public Health
Indiana	State Board of Health Indianapolis	Dr. Lee E. Burney State Health Commissioner
Iowa	State Dept. of Health Des Moines	Dr. Walter L. Bierring State Comr. of Health
Kansas	State Board of Health Topeka	Dr. F. C. Beelman Sec. & Executive Officer
Kentucky	State Department of Health Louisville	Dr. P. E. Blackerby State Health Commissioner
Louisiana	Health & Hospital Division of the Governor Baton Rouge	Mr. Charles Mitchell Director
Maine	Department of Health and Welfare, State Bureau of Health, Augusta	Dr. Leverett D. Bristol Commissioner of Health and Welfare
Maryland	Maryland State Planning Comm., 104 Equitable Building, Baltimore	Mr. I. Alvin Pasarew Director Mr. Henry P. Irr, Chrmn.
Massachusetts	Mass. Dept. of Public Health, Boston	Dr. Vlado A. Getting, Commissioner of Public Health
Minnesota	Minn. Dept. of Health St. Paul	Dr. A. J. Chesley, Secretary & Executive Officer
Mississippi	Miss. Commission on Hospital Care, 207 Tower Building, Jackson	Dr. D. V. Galloway Executive Director
Missouri	State Division of Health, Bureau of Public Health & Welfare	Dr. R. M. James Director, State Div. of Health
Nebraska	Nebraska Dept. of Health Lincoln	Dr. W. S. Petty Director of Health
Nevada	State Dept. of Health Carson City	Dr. Fred S. Loe State Health Officer
New Jersey	New Jersey State Dept. of Institutions & Agencies Trenton	Mr. Sanford Bates Commissioner
New Mexico	New Mexico Dept. of Public Health, Santa Fe	Dr. James R. Scott Director of Health
New York	New York State Postwar Public Works Planning Commission, New York	Mr. John E. Burton Chairman
North Carolina	N. C. Medical Care Commission P. O. Box 1880 613-615 Commercial Bldg. Raleigh	Mr. James H. Clark Chairman
North Dakota	State Dept. of Health Bismarck	Dr. William M. Smith Acting State Health Officer
Ohio	Ohio Dept. of Health Columbus	Dr. Roger E. Heering State Director of Health
Oklahoma	State Health Department 3400 North Eastern Oklahoma City	Dr. Grady F. Mathews Commissioner of Health
Oregon	State Board of Health Portland	Dr. Harold M. Erickson State Health Officer
Pennsylvania	State Dept. of Welfare Harrisburg	Miss S. M. R. O'Hara Sec. of Welfare
Puerto Rico	Dept. of Health San Juan	Dr. Juan A. Pons Commissioner of Health
South Carolina	State Research, Planning & Development Board Columbus	Mr. Robert M. Cooper Director
South Dakota	State Board of Health Pierre	Dr. Gilbert Cottam, Sup't., State Board of Health
Tennessee	Tennessee Dept. of Public Health, Nashville	Dr. R. H. Hutcheson, Commissioner of Public Health
Texas	State Department of Health Austin	Dr. George W. Cox State Health Officer
Utah	State Department of Health Salt Lake City	Dr. William M. McKay State Health Commissioner
Virginia	Virginia Dept. of Health Richmond	Dr. L. J. Roper State Health Commissioner
Washington	State Dept. of Health Seattle	Dr. Arthur L. Ringle State Director of Health
West Virginia	State Dept. of Health Charleston	Dr. N. H. Dyer State Health Commissioner
Wisconsin	State Board of Health Madison	Dr. Carl N. Neupert State Health Officer

CONFERENCE ON GASTRIC CANCER

The Surgeon General of the U. S. Public Health Service announced a conference held at Billings Hospital, University of Chicago, Dec. 5 and 6, 1946, arranged by the Gastric Cancer Committee of the National Advisory Cancer Council. This was the third large conference on gastric cancer sponsored by the council; the first was held in 1940 at the National Institute of Health, Washington, D. C. The recent conference stressed particularly cancer of the gastrointestinal tract. Speakers were present from various parts of the United States. The chairman of the Gastric Cancer Committee of the National Advisory Cancer Council is Dr. George M. Smith, Yale University, New Haven, Conn. The other members of the committee are Dr. Shields Warren, New England Deaconess Hospital, Boston; Dr. Owen Wangensteen, University of Minnesota, Minneapolis; Dr. Alexander Brunschwig, University of Chicago; Dr. Leonell C. Strong, Yale University; Dr. George T. Pack, Memorial Hospital for the Treatment of Cancer and Allied Diseases, New York; Dr. A. C. Ivy, University of Illinois Medical School, Chicago; Dr. Sherwood Moore, Director, Mallinckrodt Institute of Radiology, St. Louis, and Dr. Mandred W. Comfort, Mayo Clinic, Rochester, Minn.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Arkansas

Chipman, Raymond A.	Leachville
Daley, Frank R.	Arkansas
Kolb, James M.	Clarksville
Leming, Howell E.	Fayetteville
Watson, Asa C. Jr.	Little Rock

California

Ballantine, David	San Francisco
Berg, John A.	Sacramento
Bostwick, Allen E.	Los Angeles
Giannini, Albert P.	Santa Clara
Goodman, Stanley	San Francisco
Heinz, Richard	Napa County
Joyce, Milton H.	Los Angeles
Leo, Robert J.	Los Angeles
Marsh, Robert L.	Glendale
Newton, Duane T.	San Francisco
Perlmutter, Louis J.	Los Angeles
Rago, Marco R.	Los Angeles
Rocke, Robert S.	Pasadena
Smith, Jay W.	San Francisco
Steen, Claude E. Jr.	Fullerton
Szukalski, Joseph P.	Pasadena
Telling, Marvin H.	San Bernardino

Colorado

Grundset, Lloyd H.	Denver
Jenkins, Harold D	Denver
McWilliams, John E.	Colorado Springs

District of Columbia

Casella, Joseph V.	Washington
Friedman, Nathan B.	Washington
Shull, Harrison J.	Washington
Viscuse, Ferdinand M.	Washington

Georgia

Jacob, Peyton	Americus
Limbach, David R.	Atlanta
Wells, Edward D. Jr.	Savannah

Illinois

Dunlevy, Robert E.	Chicago
Eastman, Ward H.	Peoria
Greening, Gershom K.	Springfield
Kammerling, Erwin	Chicago
Kirkwood, Robert C.	Lawrenceville
Klucikowski, Norbert A.	Chicago
Little, John N.	Evanston

Iowa

Baker, Charles J.	Fort Dodge
Fesenmeyer, Charles R.	Riceville
Finnegan, Joseph V.	Carroll
Gann, Edward Russell	Sigourney
McGavic, John S.	Ft. Madison
McGilvra, Arthur L.	Maurice
Mathiasen, John W.	Council Bluffs
Myerly, William H.	Emmetsburg
Quirin, Lloyd F.	Marcus
Taber, Rodman E.	Marshalltown

Kansas

Beck, Joseph D.	Atwood
Bowen, Harry J. Jr.	Topeka
Haworth, Kenneth W.	Pratt
Ingber, Nathan G.	Wadsworth
Johnson, Delbert P.	Osawatomie
Jones, Edward S.	Canton
McCoy, Frederick J.	McPherson
Miller, Elden V.	Salina
Murphy, Franklin L.	Anthony
Schulz, Donald P.	Beloit

Maryland

Briele, Henry A.	Baltimore
Currie, Dwight M.	Baltimore
Gibbons, James R.	Baltimore
Keeney, Dan F.	Walkersville
Meade, Forest C.	Hyattsville
Tanenbaum, Solomon	Baltimore

Massachusetts

Gill, Benjamin F.	Brookline
Jillson, Otis F.	Middleboro
MacKinnon, George L.	Wollaston
Sapareto, Rocco L.	Haverhill
White, Malvin F.	Brookline
Wolf, William	Mattapan
Worthington, Richard V.	Cochituate

Minnesota

Anderson, Harold J.	St. Paul
Nelson, Alfred S.	South Minneapolis

Missouri

Capsey, Roswell E.	Kansas City
Goldman, Melvin L.	St. Louis
Neville, Eugene D.	Clinton

Nebraska

Hermann, Harland T.	Lincoln
Inda, Frank A.	Omaha
Ingham, Charles G.	Wayne
Mattson, Harold A.	Kearney
Morris, Haskell	Omaha
Neligh, Gordon L. Jr.	Grand Island
Peterson, Stanley S.	Tremont
Peterson, Wendell C.	Fairbury
Raines, Max M.	Weeping Water
Wanek, Frank W.	Aurora

New Hampshire

MacAllister, John D.	Keene
Tanzer, Radford C.	Hanover
Trapp, Harry E. Jr.	Laconia

New Jersey

Kamens, Leslie	Newark
Reinhart, Harry A.	Atlantic City
Steinhardt, Edward E.	Atlantic City

New York

Andres, Francis A.	Allegany
Anz, Umbert E.	Endicott
Aragon, Potenciano R.	New York
Barney, Bernard B.	Schenectady
Baron, George J.	Rochester
Beamer, George D.	Brooklyn
Bucky, Thomas L.	New York
DeAngelis, Anthony M.	Yonkers
DePue, David D.	Canton
Dinerman, Benjamin	Brooklyn
Feinblatt, Theodore M.	Brooklyn
Fuchs, George F.	New York
Garben, Louis F. Jr.	Islip
Hubert, James W.	Jamaica
Huggins, Cecil R. Jr.	Andes
Iandoli, Louis J.	Jamaica
Jakobsons, Henry	Richmond Hill, L. I.
Jampol, Morris L.	Brooklyn
Kean, Benjamin H.	New York
King, William E.	Elmhurst
Kirkland, Henry B.	New York
Klebanoff, Milton	Yonkers
Mellisy, Andrew	Elmhurst
Milford, Charles R.	Skaneateles
Minkel, Amos J. Jr.	Hamburg
Peters, Nicholas S.	Utica
Pomerantz, Norman	Albany
Prancl, William J.	Long Island City
Radice, Lawrence J.	Buffalo
Robertson, Douglas H.	Mount Vernon
Schwarz, Eugene E.	New York
Seccafico, Joseph A.	Brooklyn
Sermak, Edmund R.	Olean
Shechtman, Michael	Bronx
Stockhammer, Stanley F.	Bayside
Stone, William Jr.	New York
Sussman, Harry	New York
Szoo, Joseph F.	New York
Weisz, Albert B.	Brooklyn
Williams, Selden T. Jr.	Bellerose
Willner, Andre E.	Brooklyn
Winant, Edward M.	New York
Zuckerman, Arthur D.	Brooklyn

North Carolina

Allen, Jerry H. Jr.	Reidsville
Corbin, George W. Jr.	Durham
Daniel, Thomas B.	Oxford
Hawfield, Harold H.	Concord
Lea, Melvin E.	Greensboro
McManus, Hugh F. Jr.	Raleigh
Perry, Glen G.	High Point
Scott, Alan F.	Goldsboro
Smart, Gardner F.	Ayden
Stancil, James R.	Ridgecrest

North Dakota

Clark, Ira D.	Milnor
Kremer, Leslie A.	Linton
Spear, Will N.	Dickinson

Ohio

Buente, Louis C. Jr.	Cincinnati
Imburgia, Frank J.	Cleveland
Jacobs, Donald L.	Cheviot
Kauffman, James R.	Columbus
Mullally, Pierce H. Jr.	Cleveland
Rothe, William S.	Columbus

Oklahoma

Appleton, Meredith M.	Oklahoma City
Batchelor, John J.	Oklahoma City
Binder, Harold J.	Oklahoma City
Box, Otho H. Jr.	Grandfield
Clark, Benjamin P.	Okeene
Kite, William C. Jr.	Oklahoma City
McDonald Glen W.	Binger
Swisher, Forrest M.	Oklahoma City

Pennsylvania

Bean, Carl B.	Meadville
Brobst, Henry T.	Wilkes-Barre
Costello, Patrick J.	Vandling
Machover, Saul	Pittsburgh
MacLean, Paul D.	Philadelphia
Penta, John J.	Reading
Perry, Joseph H. III	Rosemont
Raffensperger, E. C.	Boiling Springs
Schnabel, Truman G. Jr.	Philadelphia
Wright, Alfred E.	Uniontown

Rhode Island

Buxton, Bertram H. Jr.	Providence
Coren, Simon	Providence
DiClemente, Bruno	Providence
Medoff, Edward B.	Woonsocket
Tartaglino, Eugene J.	Newport

South Carolina

Andrews, Charles H. Jr.	Sumter
Brown, Robert A. Jr.	Greenville
Lee, Frank B.	Scranton
Tanner, Waitus O.	Columbia
Townsend, William B.	Charleston

South Dakota

Reagan, Paul C.	Sioux Falls
Stueland, Alvin J. R.	Sioux Falls

Texas

Bessire, Milton C.	Hamlin
Brucer, Marshall H.	Galveston
East, Norman R.	Houston

Virginia

Armistead, George C. Jr.	Roanoke
Barnes, Robert H. Jr.	Richmond
Bastien, Henry L.	Arlington
Carmines, Fay A.	Odd
DeVito, Michael P.	Alexandria
Jeter, Norbourne B.	Covington
Richards, Ashby T.	Harrisonburg
Walsh, Charles M. III	Crewe

Puerto Rico

Bertran, Juan M. Jr.	Santurce
Diaz, Luis A.	Rio Piedras
Rodriquez, Ervin Edi	Ponce

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education and public health.)

ARIZONA

Arnold B. Kurlander Leaves State Health Department.—Dr. Arnold B. Kurlander, Phoenix, for more than a year director of the mass chest x-ray program of the state department of health's division of tuberculosis control, left recently for Ohio, where he will activate a similar program. Lent to the state by the U. S. Public Health Service, he is credited with doing much to make the people of Arizona conscious of their greatest health problem—tuberculosis. Principal objectives of the survey have been, first, to discover early cases of tuberculosis so that they may be brought under proper medical care and supervision during the most infectious stage of the disease; second, to discover "hidden" cases and assist in their isolation and, third, to educate the people in the problem of tuberculosis. Since late in 1945, when the program began, 108,000 x-ray pictures have been taken, 1,500 of which showed evidence of reinfection pulmonary tuberculosis. The mobile x-ray unit has operated in every county except three, which will be covered in a new series of surveys begun in January of this year.

CALIFORNIA

Herrick Memorial Hospital.—To honor Dr. LeRoy Francis Herrick, who founded the Berkeley Hospital in 1904 and conducted it for twenty-eight years and whose fortune was donated to this community nonprofit enterprise, the board of directors recently dedicated the institution to the founder and named it the Herrick Memorial Hospital. The new $750,000 hospital addition now being completed was financed by a grant and loan from the federal government and is being equipped through contributions and loans from members of the medical staff and friends of the hospital.

Premarital Blood Test Regulations Amended.—The state board of health has amended its regulations, so that hereafter laboratories will not be approved to do antepartum and premarital tests "if they advertise the performance of these tests in magazines, newspapers, directories, circulars, etc., commonly read by the lay public." Laboratories must also submit to check tests and stipulation of the kind of license which must be held by a person who performs antepartum and premarital tests must be made. The new regulations will soon be ready for distribution, according to *California's Health*, a publication of the state department of health.

Midwinter Conferences of Ophthalmology and Otolaryngology.—Guest speakers at the annual midwinter postgraduate clinical conference in ophthalmology and otolaryngology in Los Angeles, January 20-31, sponsored by the Research Study Club, include Drs. Luzius von Rüedi, Bern Switzerland; Sam E. Roberts, Kansas City, Mo.; Samuel Salinger, Chicago; Ben H. Senturia, St. Louis; William L. Benedict, Mayo Clinic, Rochester, Minn.; Henry P. Wagener, Mayo Clinic, Rochester, Minn.; Kenneth C. Swan, Portland, Ore.; David O. Harrington, San Francisco; Dohrmann K. Pischel, San Francisco, and Meyer Wiener, Coronado, Calif.

ILLINOIS

University News.—Gifts and research grants totaling $122,713 have been made to the University of Illinois—$20,000 of which is for the visual education fund of the College of Medicine in Chicago and $16,000 for research in allergy.

Alienists Hold Postgraduate Conference.—Under the auspices of the Division of Alienists, State of Illinois, there will be a two day postgraduate conference in neuropsychiatry at the Lincoln State School and Colony, Lincoln, January 28-29. The speaker of the evening meeting January 28 will be Dr. Anton J. Carlson, emeritus professor of physiology, University of Chicago, whose subject will be "Can research in our state hospitals contribute to the understanding of the causes of alcohol addiction?" Other well known professors and doctors of Illinois will address the sessions.

Illinois Bacteriologists.—At the winter meeting of the Society of Illinois Bacteriologists January 17 Kenneth B. Raper, Ph.D., Peoria, spoke on "Variation in Molds—Natural and Induced." Drs. Katherine E. Hite, H. Close Hesseltine and Louis Goldstein, University of Chicago College of Medicine, presented "A Study of the Bacterial Flora of the Normal and Pathological Vagina and Uterus." Albert Milzer, Ph.D., Chester Byrd and Dr. Sidney O. Levinson, Chicago, reported "The Use of Autolyzed Brain to Facilitate Transmission of Poliomyelitis to Mice." "Factors Influencing the Stability of Influenza Virus" was under discussion by George F. Forster, Ph.D., Venus Love, B.S., and Esther Carson, D.D.S., Illinois Department of Public Health.

Chicago

The Hektoen Lecture.—The twenty-third Ludvig Hektoen Lecture of the Frank Billings Foundation will be delivered at the Palmer House Friday, March 28, at 8 p. m. by Dr. Herbert M. Evans, director, Institute of Experimental Biology, University of California, on "The Internal Secretions of the Pituitary Body."

Personal.—Dr. Lester R. Dragstedt, professor of surgery, University of Chicago School of Medicine, addressed the Baltimore City Medical Society, Baltimore, Dec. 6, 1946 on "Section of the Vagus Nerves to the Stomach in the Treatment of Peptic Ulcer."——Albert Milzer, Ph.D., formerly research virologist of the Samuel Deutsch Serum Center, Chicago, has been appointed director of the department of bacteriology, Michael Reese Hospital, Chicago, to succeed Dr. Katharine M. Howell, who retired Dec. 31, 1946.

Institute of Medicine Elects Officers.—The Institute of Medicine of Chicago has announced that Drs. Joseph L. Baer has been elected president for 1947; William H. Welker, vice president; George H. Coleman, secretary, and Grant H. Laing, treasurer. Dr. William F. Petersen is chairman of the board of governors, and Drs. Joseph L. Baer, Warren H. Cole and LeRoy H. Sloan have been elected governors for terms of five years. Drs. Stanley Gibson and J. Roscoe Miller have been elected to the unexpired terms of Drs. Ludvig Hektoen and James B. Herrick, who because of age have resigned as members of the board after thirty-one years of continuous and exceptional service.

INDIANA

Changes in Health Officers.—Dr. Charles M. Gibbs recently resigned as Greenfield city health officer after serving many years. His successor will be Dr. R. E. Kinneman, Greenfield.

Countywide Immunization.—Through the county medical society free immunization service has been offered to school children throughout the city of Columbus and Bartholomew County in relation to diphtheria, whooping cough and smallpox.

Acting Medical Director of University Medical Center.—Dr. Donald J. Caseley was recently appointed acting medical director of the Indiana University Medical Center, succeeding Dr. John D. Van Nuys. Dr. Caseley, a native of Sullivan, Ill., received his A.B. degree from DePauw University in 1933 and a medical degree from Indiana University School of Medicine in 1937. He interned at Indianapolis City Hospital. He also served as an orthopedic surgeon in the Army Medical Corps in the recent war.

KENTUCKY

Personal.—Dr. Milus L. Gunn, Harlan, has left for India to do specialized study in the Church Missionary Society of England Hospital, Shikapur, India, located near the Iranian border.

Eight Scholarships Established.—Eight scholarships of $2,000 each have been established for the $100,000 Medical Scholarship Fund for medical students who agree to practice in rural districts of Kentucky after graduation. The scholarships will be administered by the trustees of the fund for the Kentucky State Medical Association and the University of Louisville School of Medicine. According to H. Fred Willkie, Louisville, chairman of the General Fund Committee, Dr. Omer Forest Hume, Richmond, donated the first scholarship. Dr. Hume graduated from the medical department of the University of Louisville in 1917. The Dr. Van A. Stilley Memorial Scholarship has been set up by his heirs. The late Dr. Stilley served as field director for the state department of health in western Kentucky and was president of the state medical association in 1943. The Houston Memorial Scholarship has been granted by Mrs. Jesse Houston Roane, Drs. Hugh L. Houston and Hal E. Houston, Murray, in memory of their father, the late Dr. Edward Brent Houston, one of the leading physicians of Calloway County for thirty years. The scholarship is to be awarded to a premedical student of high standing from Murray State College. Dr. Carl Clifford Howard, Glasgow, present counselor of the association and chairman of the board of trustees of the Medical Scholarship Fund, has presented the Howard Clinic Scholarship. A scholarship was granted by Dr. Gaithel L. Simpson, Greenville, member of the state board of health and board of trustees of the scholarship fund.

Three scholarships of $2,000 each honoring Dr. Charles W. Jefferson, Louisville, have been set up at the University of Louisville School of Medicine by Joseph E. Seagram and Sons Company, distillers, which Dr. Jefferson serves as physician. The Dr. Charles W. Jefferson Scholarship for Surgery was donated by H. Fred Willkie, vice president of the company, and Mrs. Willkie. The Charles W. Jefferson Industrial Medicine Scholarship was raised by employees from cafeteria funds and recreational programs. The Charles W. Jefferson Scholarship for Rural Medicine was established by the company. About one third of the total fund has been subscribed. The revolving Medical Scholarship Fund, launched Dec. 12, 1945, was set up originally as a revolving fund of $50,000 to $75,000 (The Journal, Jan. 19, 1046, p. 162), and the first scholarship was awarded last spring. The trustees of the fund are Drs. John W. Moore, dean, University of Louisville School of Medicine; Gaithel L. Simpson, Greenville; Carl Norfleet, Somerset; Philip E. Blackerbey, Louisville; Senator Cass Walden, Edmonton; Joe Betts, Louisville *Courier-Journal;* Russell Dyche, London, and Mrs. Charles Shelton, Louisville.

MARYLAND

Dr. Victor F. Cullen Retires.—A dinner in his honor in Baltimore December 31 marked the retirement of Dr. Victor F. Cullen as superintendent of all Maryland tuberculosis sanatoriums. Dr. Cullen graduated from Johns Hopkins University Medical School and while an intern at St. Joseph's Hospital is said to have developed tuberculosis. After two years of care and treatment in a sanatorium he returned to Maryland. According to the governor, Dr. Cullen is "the father of modern tuberculosis work in Maryland." He is also a past president of the National Tuberculosis Association.

NEW JERSEY

New Orthopedic Society.—At a recent meeting in Long Branch the New Jersey Orthopedic Society with nineteen founder members elected Drs. Leopold Szerlip, Newark, president, Harold W. Smith, Orange, vice president, and Raphael R. Goldenberg, Paterson, secretary-treasurer.

Academy of Medicine.—Dr. Stewart G. Wolf Jr., assistant professor of Medicine, Cornell University Medical College, New York, will give an illustrated lecture before the Academy of Medicine of Northern New Jersey January 23 on "Changes in Gastric Function Associated with Varying Emotional States and Life Situations."

NEW YORK

Society News.—Dr. Merton C. Hatch, associate professor of clinical obstetrics, Syracuse University College of Medicine, January 9 addressed the Jefferson County Medical Society on "Prenatal and Postpartum Care."

Qualifications for Local Health Officers Revised.—The state sanitary code relating to the qualifications of grade I local health officers has been amended and became effective in December 1946. Previous grade I requirements are retained as grade I-A but apply only to health officers of cities and counties having a population of more than 100,000. Qualifications prescribed for grade I-B are somewhat lower than former grade I qualifications. Previous requirement of four years' full time experience is reduced to three years and, in the case of combined full time experience and scholastic training, the amount of experience is reduced from two years to one year. Local health officers of cities having a population of 50,000 to 100,000 and health commissioners of counties having a population of 100,000 or less must possess grade I-B qualifications. Qualifications for grade II health officers of all towns, villages, consolidated health districts and cities having less than 50,000 population remain unchanged. According to revised requirements, deputy health officers acting temporarily as health officers during the absence or disability of the health officer must possess the qualifications of a grade I-B health officer; part time, those of a grade II health officer. Amendments to the code followed a study by a special committee appointed by the public health council.

New York City

Institute of Oral Pathology.—Dr. Lloyd F. Carver, New York City, will read a paper entitled "Lymphomas and Leukemias and Their Oral Manifestations" at the monthly conference of the New York Institute of Clinical Oral Pathology at the New York Academy of Medicine, January 27, 9 p. m.

Academy Centennial.—In his inaugural address before the New York Academy of Medicine January 2, Dr. George Baehr, president, announced the centenary celebration of the academy which is to be inaugurated with a dinner at the Waldorf-Astoria Hotel March 6. Dr. John A. Ryle, formerly regius professor of physic, University of Cambridge, England, and now head of the Institute of Social Medicine, Oxford, will be the speaker.

Dr. Jarcho Honored.—Dr. Julius Jarcho, obstetrician and gynecologist, was recently honored on his retirement as president of the medical board of Sydenham Hospital at a dinner at which the hospital medical library was formally named the Dr. Julius Jarcho Library. Dr. Jarcho has served as president of the medical board during the last ten years of the forty that he has been associated with the hospital. He graduated from Columbia University College of Physicians and Surgeons in 1904.

Lectures on Venereal Diseases.—A series of free lectures for practicing physicians on diagnosis and treatment of venereal diseases have been planned by the department of health bureau of social hygiene. Meetings are held at the health department building every Saturday morning at 10:30 and will continue through April 26. Experts in special fields of venereal disease control are participating in seminars. On January 25 Dr. Leslie P. Barker, assistant professor of dermatology and syphilology, Columbia University College of Physicians and Surgeons, will discuss "Primary and Secondary Syphilis: Cutaneous Aspects and Differential Diagnosis and Treatment."

SOUTH CAROLINA

Personal.—Dr. John F. Busch, Columbia, was recently appointed assistant chief of the tuberculosis division of the department of medicine and surgery for the Veterans Administration in five Southeastern states. For the past two years Dr. Busch has been medical director of the South Carolina Tuberculosis Association.

Portrait of Dr. Boyd.—Friends and patients of Dr. William A. Boyd, Columbia, recently presented a portrait of Dr. Boyd to Columbia Hospital. The presentation address was given by Dr. Bruce Gill, emeritus professor of orthopedic surgery, University of Pennsylvania. The meeting was attended by physicians and friends of Dr. Boyd from various parts of the country.

County Society Honors Veterans. — The Greenville County Medical Society held a banquet December 2 to honor forty-four returned veterans and one member, John Dendy McBrearty, who gave his life in the service. Each veteran was given a framed scroll attesting appreciation of his efforts in World War II. A bronze plaque was unveiled to the memory of Dr. McBrearty.

TENNESSEE

Society Elections.—Dr. John C. Burch, Nashville, Tenn., *gynecologist, has been elected president of the Nashville* Academy of Medicine and Davidson County Medical Society, succeeding Dr. George Carpenter, Vanderbilt University.—— Dr. W. J. Johnson, Pulaski, Tenn., was named president of the Middle Tennessee Medical Association at its semiannual meeting. Dr. Clarence S. Thomas, Nashville, was chosen vice president and Dr. Carl N. Gessler, Nashville, secretary-treasurer.

WEST VIRGINIA

Practical Nurse Symposium.—Sponsored by the state medical society, state nurses association and the state hospital association, a symposium on the training and service of practical nurses was held Dec. 10, 1946 at Charleston. A resolution was adopted recommending that a survey be made early in 1947 to ascertain the number of women between the ages of 18 and 50 who might be interested in a one year course in practical nursing and that such a course be developed as rapidly as interest warrants. In another resolution it was suggested that the proper officials inaugurate a refresher course without delay for practical nurses who can show evidence that they have satisfactorily worked as practical nurses within the state for the past year. Addresses were delivered by W. T. Sanger, Ph.D., Richmond, Va., president of the Medical College of Virginia; Miss Cecile Covell, R.N., nursing director Neurological Center, Presbyterian Center, New York City; Miss

Nettie Yowell, state supervisor, vocational training for women, state department of education, and Miss Hilda Torrop, R.N., president of the National Association of Practical Nurses. Miss Martha Wooddell, R.N., Clarksburg, presided at the meeting.

GENERAL

Death of Miss Beard.—Miss Mary Beard, Westport, Conn., former director of the American Red Cross Nursing Service and founder of the National Organization of Public Health Nursing, died Dec. 5, 1946 at the age of 70. Miss Beard served the Red Cross during both world wars. She wrote the book "The Nurse in Public Health." Miss Beard resigned her post in the Red Cross Nursing Service in August 1944.

American Board Examination.—The next examination of the American Board of Phychiatry and Neurology for certification in neurology and psychiatry has been tentatively set for May 15-17 in Philadelphia. Applications should be in the hands of the secretary, Dr. F. J. Braceland, 102-110 Second Avenue S.W., Rochester, Minn., ninety days before the examination is scheduled. The last possible date for filing is March 1.

Smallpox.—*Public Health Reports* for Dec. 27, 1946 summarizes the reports of smallpox cases received from various countries through January-September of that year. It is interesting in connection with the current comment concerning smallpox in this issue of The Journal that some cases of smallpox were reported from at least eighty-nine countries. The number of cases reported during that period varied from 1 each in some countries to 57,378 cases in India.

Facts About Nursing.—The Nursing Information Bureau of the American Nurses Association has prepared a booklet called "Facts About Nursing, 1946," which is a complete handbook of statistics covering every possible phase of activity in the nursing profession. Here are the data concerning the size of the profession, distribution of nurses, institutions for the education of nurses, the various fields of specialization and opportunities for employment and advancement. The pamphlet is available from the Nursing Information Bureau at 1790 Broadway, New York 19, at the price of 35 cents.

American Association for the Advancement of Science.—Twenty-six papers in a symposium on "The Rickettsial Diseases of Man" were presented before the medical sciences section of the American Association for the Advancement of Science, which met in Boston Dec. 26, 1946. Some of the other papers were on epidemic typhus, Q fever and tsutsugamushi disease. Charles F. Kettering, D.Sc., director of the research laboratories, General Motors Corporation, delivered the retiring president's address on the future of science. President James Bryant Conant of Harvard University is the incoming president of the association.

Narcotic Violations.—The Bureau of Narcotics reports that Dr. W. D. Maag, Jeffersonville, Ohio, pleaded guilty at Columbus, Ohio, to violation of the federal narcotic law and on Nov. 25, 1946 was sentenced to a term of three years.——Dr. Harry Alonzo K. Hill, Laverne, Okla., pleaded guilty to violation of section 2554(a) of the Internal Revenue Code in the U. S. District Court at Oklahoma City, Okla., and on Nov. 20, 1946 his sentence of five years was suspended and he was placed on probation for a like period. He was also fined the sum of $500, according to an announcement from the Bureau of Narcotics, Washington, D. C.

Essay Contest.—The seventh annual essay contest of the Mississippi Valley Medical Society offers for 1947 a cash prize of $100, a gold medal and a certificate of award for the best unpublished essay on a subject of medical interest and practical value to the general practitioner of medicine. Contestants must be members of the American Medical Association who are residents of the United States. The winner will present his contribution before the Mississippi Medical Society in October. Manuscripts must be received not later than May 1. Further details may be secured from Dr. Harold Swanberg, secretary, Mississippi Valley Medical Society, 209-224 W. C. U. Building, Quincy, Ill.

Seeing Eye Dog Hoax.—Unfounded reports continue to circulate that a blind person can obtain a Seeing Eye dog by collecting quantities of tinfoil, empty paper match folders, cigaret packages or similar articles, warns Edward L. Greene, general manager of the National Better Business Bureau. These stupid rumors, Mr. Greene states, still gather in new victims despite unceasing work to stamp out the hoax by the press, the Better Business Bureaus and the commercial companies innocently involved; and scores of blind persons have saved thousands of useless articles, some with the help of their entire community, only to find that their work was in vain. The Seeing Eye of Morristown, N. J., has repeatedly stated that blind persons desiring a dog should write directly to the organization for particulars.

Society for Study of Sterility.—The first annual conference for the Western Branch of the American Society for the Study of Sterility will be held in Los Angeles February 7-8 to discuss advances in the management of the barren marriage, with particular reference to clinical applications. Topics to be discussed include the social aspects of infertility, role of the hypothalamus, nutritional deficiencies, management of habitual and threatened abortion, physiology of spermatogenesis, the control of ovarian activity, hyalouronidase, semen evaluation, testicular biopsy and hormonal assays. Among the speakers are Drs. Benjamin B. Weinstein, Tulane University School of Medicine, and Carlos D. Guerrero, Mexico City. Further information may be secured from Dr. A. R. Abarbanel, Secretary Program Committee, 441 South Beverly Drive, Beverly Hills, Calif.

Professor Whitby Returns to England.—Sir Lionel Whitby, regius professor of physic, University of Cambridge Department of Medicine and honorary consulting hematologist to the Royal Army Medical Corps, returned to England November 29, having been in this country since October 21. During his stay in the United States he delivered the Hunter Memorial Lecture at the Peter Bent Brigham Hospital, Boston; the Eastman Memorial Lecture at the University of Rochester School of Medicine and Dentistry, Rochester, N. Y., and the A. C. Helmholz Lecture at the University of Wisconsin Medical School, Madison. He was also guest lecturer at Western Reserve University School of Medicine, Cleveland; Ohio State University College of Medicine, Columbus; the University of Michigan, Ann Arbor; the Chicago Institute of Medicine, and the State University of Iowa College of Medicine, Iowa City. Sir Lionel, who is said to have been the first physician to apply sulfapyridine to clinical practice, is well known as the co-author of a textbook on hematology.

Nobel Prize Winners in 1946.—At a ceremony in Stockholm, Dec. 10, 1946, King Gustav of Sweden awarded the Nobel Prize in Medicine and Physiology to Herman Joseph Muller, Ph.D., professor of zoology at Indiana University, Bloomington, Ind., and formerly professor of biology at Amherst College, Amherst, Mass., for his research in genetics. The award in chemistry was shared by three men, one half going to James Batcheller Sumner, Ph.D., professor of chemistry at Cornell University, Ithaca, N. Y., for his research on enzymes; the other half was awarded jointly to John Howard Northrop, Ph.D., and Wendell M. Stanley, Ph.D., of the Rockefeller Institute, Princeton, N. J., for their research on virus proteins. The Nobel prize in physics was awarded to Percy Williams Bridgman, Ph.D., formerly professor of physics, Harvard University, Cambridge, Mass., and since 1926 professor of mathematics and natural philosophy, for his research on atmospheric pressure. About 500 persons, including the entire royal family, witnessed the ceremony in the Concert House and attended the prize dinner in the Town Hall. Each of the Nobel prizes was worth $34,000.

Special Society Elections.—At the recent annual convention of the American Academy of Dermatology and Syphilology, Dr. Edward A. Oliver, Chicago, professor of dermatology at Northwestern University, was elected president.——Dr. E. Harold Hinman was chosen president-elect of the National Malaria Society at its twenty-ninth annual meeting in Miami, Fla., Nov. 4 to 7, and Dr. Mark D. Hollis was installed as president.——Dr. Willard O. Thompson, Chicago, was chosen president-elect of the Mississippi Valley Medical Society during its eleventh annual meeting recently, and Dr. Walter A. Sternberg, Mount Pleasant, Iowa, was inducted into the presidency.——The newly elected officers of the Central Association of Obstetricians and Gynecologists are as follows: Drs. Earl C. Sage, Omaha, president; William F. Mengert, Dallas, Texas, president-elect; George A. Kamperman, Detroit, vice president; John I. Brewer, Chicago, secretary-treasurer, and Harold L. Gainey, Kansas City, Mo., assistant secretary-treasurer.——At the fifty-eighth annual session of the Southern Surgical Association in Hot Springs, Va., Dec. 10-12, 1946 Dr. Frank S. Johns, Johnston-Willis Hospital, Richmond, Va., was elected president. Vice presidents named were Dr. Charles Reid Edwards, Baltimore, and Dr. Frank C. Wilson, Birmingham, Ala.——Dr. Irvin Abell, clinical professor of surgery, University of Louisville School of Medicine for over forty years, was inaugurated president of the American College of Surgeons at the recent meeting in Cleveland Dr Abell is a past president of the American Medical Association, the Southern Medical Association and the Southern Surgical Association

Annual Meeting of American Academy of Orthopaedic Surgeons—The fourteenth annual meeting of the American Academy of Orthopaedic Surgeons will be held in the Palmer House, Chicago, January 25-30 Dr Myron O Henry Minneapolis, secretary of the academy, estimates that more than 800 bone and joint surgeons from the United States, Canada and Mexico will attend Preceding the formal meeting, which opens Monday, January 27, there will be a series of lectures covering various phases of orthopedic surgery Speaking at the instructional course dinner at 7 p m January 25 will be Dr James E M Thompson, Lincoln Neb president of the academy, whose subject will be 'Orthopedic Surgery Behind the Iron Curtain" and Sir Reginald Watson Jones, professor of orthopedic surgery at the University of London and orthopedic surgeon to the King of England who will discuss Personal Experiences as Consultant for the Royal Army Air Force ' Dr Thompson visited medical colleges and medical centers in Europe last summer The academy s annual historical dinner will be held Tuesday evening, January 28 and the annual dinner and dance will take place Wednesday evening The committee in charge of the Chicago meeting is headed by Drs Edwin W Ryerson, Chicago, honorary chairman, who served as the academy s first president and John R Norcross, Chicago, general chairman

Recommendations of Public Health Cancer Association—The Public Health Cancer Association of America comprising numbers of both voluntary and official cancer control agencies, at a recent special meeting in Cleveland adopted the following resolutions and recommendations

1 That a national cancer control advisory committee be formed to help achieve integration and cooperation among the national organizations now engaged in cancer control

2 That similar committees be organized in each state and community having an organized cancer program

3 That a representative of the U S Public Health Service cancer control division and an individual representing state health department divisions of cancer control be included in the national committees of the American Cancer Society

4 *That an official cancer control program be organized in each state* department of health

5 That an official state agency be established in each state for confidential cancer morbidity reporting case registration and follow up

6 That schools of public health make increased provision for the training of cancer control administration officers

7 That the importance of thorough and complete periodic health examinations of apparently well persons be emphasized

8 That more funds be made available to meet the needs for care of advanced cancer patients

9 *That the role of voluntary agencies in supplementing official cancer* control programs in stimulating and supporting the development of complete and continuing control programs be emphasized

The association elected as president Dr Morton L Levin, Albany, director of the New York State Health Department's division of cancer control, to succeed Dr Herbert L Lombard Boston, Massachusetts Department of Health

Gift to Establish a Chorionepithelioma Registry—The American Association of Obstetricians, Gynecologists and Abdominal Surgeons has accepted a generous gift from Dr Albert W Holman Portland Ore for a registry of material dealing with the hydatidiform mole and chorionepithelioma It is to be a memorial to the late Dr Albert Mathieu joint author with Dr Holman of papers dealing with this subject A committee to carry out the purpose of the registry has been appointed Drs Emil Novak, Baltimore, Albert W Holman, Willard R Cooke, Galveston Texas, Robert A Ross, Durham N C, James R Miller, Hartford, Conn, and Herbert E Schmitz, Chicago Since there is no crystallization of opinion as to histologic criteria of malignancy in lesions of this group and no one laboratory can expect to accumulate a sufficient number of these relatively rare lesions to permit satisfactory studies on this point it is hoped that clinics and laboratories throughout the country will cooperate by sending in material of this sort Thus the registry will be able to accumulate a large storehouse of material which can be authoritatively studied and for which there will be adequate clinical data as well as follow up studies Communications and material may be directed to the chairman of the committee, Dr Emil Novak 28 East Preston Street, Baltimore, or to Johns Hopkins Hospital Laboratory of Gynecological Pathology, Baltimore Simple clinical forms to facilitate supplying adequate clinical data will be mailed to those sending in material

Official Number of Deaths—Figures just released by the U S Public Health Service place the total number of deaths reported in continental United States exclusive of deaths in the armed forces overseas, in 1945 at 1,401,719 This was a smaller number than was reported in the two preceding war years The number due to tuberculosis was 3 3 per cent less than in 1944 and fewer than in any previous year Deaths from pneumonia and influenza were 16 4 per cent fewer than in 1944 and 8 2 per cent less than the previous minimum in 1942 Heart diseases accounted for 30 3 per cent of the reported deaths as compared with 29 6 in 1944 Cancer claimed 12 7 per cent of the total as compared with 12 1 per cent in 1944 All accidental causes accounted for 95,918 deaths, which number includes 28 076 deaths due to motor vehicle accidents The *same ten causes which led the list in 1945* are those which headed the list in the two prewar years, and, with the exception of motor vehicle accidents, they rank in the same order The ten leading causes of death in the United States in 1945 were

Heart diseases	424,328
Cancer and other malignant tumors	177 464
Intracranial lesions of vascular origin	129,144
Nephritis	88 078
Pneumonia and influenza	68 386
Accidents, excluding motor vehicle accidents	67,842
Tuberculosis	52,916
Diabetes mellitus	35,160
Premature birth	31,614
Motor vehicle accidents	28 076

New Research Institute for Tropical Medicine in Liberia.—The president of Liberia, West Africa William V S Tubman, announces that an international research institute for tropical medicine will be built in that country during 1947. The research center, which will be located near Roberts Field, an international airport, is sponsored by the American Foundation for Tropical Medicine, Inc, New York A $250,000 grant to the Liberian government for buildings and equipment was made in August 1946 by Harvey S Firestone Jr The American Foundation for Tropical Medicine a nonprofit corporation which carries on scientific enterprises in support of tropical medicine, has assured the maintenance and operation of the Liberia Institute at an estimated primary cost of $100 000 a year The Liberian government has contributed a building site of about 100 acres adjacent to Roberts Field and fronting the beautiful Farmington River, also a supplementary 600 acre site for operating a livestock range and for veterinary research and training The advantages in locating a research institute in Liberia are those incident to a highly staple tropical climate and opportunities for research in parasitology, pathology and nutrition general surgery, virus diseases including poliomyelitis spirochetal diseases and filariae, malaria and other tropical diseases, many of which menace all nations All findings of the institute are to be disseminated to all interested medical institutions and scientists An active research program is expected to be under way by 1948 Exchange fellowship agreements have already been made with seven schools of tropical medicine in the British Isles and Europe, also with the Louis Pasteur Institute American medical schools represented on the scientific advisory committee for the Liberian Institute include Harvard, Tulane, Johns Hopkins, Stanford California, Bowman Gray Southern California, Michigan Chicago New York University, Duke, Long Island Medical School and the medical schools of Howard and Meharry universities Other institutions serving in an advisory capacity include the Eli Lilly Research Laboratories, the Squibb Institute for Medical Research the Army Medical College, the Winthrop Chemical Company, the Gorgas Memorial Institute and the United Fruit Company

CORRECTION

Carotid Sinus Syndrome—*In the editorial by this name* in THE JOURNAL Sept 7 1946, in line five, second paragraph, second column on page 24 "A solution of epinephrine sulfate" should read 'A solution of atropine sulfate

Marriages

AUBREY OTIS HAMPTON, Boston, to Mrs Astrid Irene Young at Chevy Chase Md, September 16

WALTER J ROBERTS to Mrs Alice Eleanor Stewart, both of Rochester, N H, in September

WILLIAM T O CONNELL, Boston, to Miss Dorothy M. Hogue of New Castle, Pa, in September

GEORGE R LOVFALL to Miss Olive Louise Reppard, both of San Diego, Calif, September 22

CHARLES D SCHAEFFER to Miss Sallie Ann Koch, both of Allentown, Pa, September 14

Deaths

Reuben Bennett Anderson Jr. ⊕ Fort Worth, Texas, for almost twenty years assistant secretary of the State Medical Association of Texas and assistant editor of the *Texas State Journal of Medicine;* died January 2, aged 52, of coronary occlusion. Dr. Anderson was born in Seguin, Texas, Dec. 14, 1894. He attended the public schools of Sherman, Texas, and graduated from Austin College in Sherman in 1914. He graduated from the University of Texas School of Medicine, Galveston, in 1918, served an internship at the John Sealy Hospital and later did postgraduate work in eye, ear, nose and throat in New Orleans. Dr. Anderson then was commissioned a lieutenant in the medical corps of the navy, serving for about two and one-half years, first in New Orleans, then with the Transport Service and then in Santo Domingo. He returned to Texas in 1921 to begin the practice of medicine at San Marcos and moved to Thorndale in 1923, where he served as a member of the school board and where he practiced until 1927, when he joined the staff of the state medical association in the assistant secretary-editor, positions, which he held at the time of his death. He was recently made librarian of the association. Dr. Anderson had served as alternate delegate from Texas to the American Medical Association since 1927 and on three occasions, the last in December 1946, served as delegate. He was at one time a member of the Fort Worth Eye, Ear, Nose and Throat Society, a past president and member of the board of directors of the Fort Worth Anglers Club, and a member of Tarrant County Wildlife Association and of the Lake Worth-Eagle Lake advisory board to the Texas Game, Fish and Oyster Commission. Dr. Anderson was vice chairman for Texas of Procurement and Assignment for Physicians in World War II and chairman of the Committee on Public Relations of the State Medical Association of Texas for about a year and a half up to May 1946.

Alexander James Barclay, Newburgh, N. Y.; born in Ardonia, N. Y., Feb. 13, 1896; Cornell University Medical College, New York, 1928; member of the American Medical Association; interned at the New York Post-Graduate Medical School and Hospital in New York and the Psychiatric Institute in Morristown, N. J.; served on the staffs of the Cornwall (N. Y.) Hospital and the St. Luke's Hospital; fellow of the American College of Surgeons; served during World War I; began active duty as a lieutenant commander in the medical corps of the U. S. Naval Reserve in April 1942; spent twenty-eight months as chief surgeon aboard a transport, after having taken part in the landing in North Africa; promoted to commander; demobilized in January 1946; accidentally shot and killed near Limerick, Maine, Oct. 31, 1946, aged 50, when a member of his hunting party fired at what he thought was a deer.

Andrew Jay Timberman, Columbus, Ohio; born in Hamilton, Ohio, May 10, 1864; Miami Medical College, Cincinnati, 1894; member of the American Medical Association and the American Academy of Ophthalmology and Oto-Laryngology; past president of the Columbus Academy of Medicine; fellow of the American College of Surgeons; served on the faculties of Ohio Medical University, Starling Ohio Medical College and Ohio State University College of Medicine; formerly member of the city board of education; specialist certified by the American Board of Ophthalmology; oculist for the medical advisory board, Columbus District, U. S. Army, from 1917 to 1919; on the staffs of the Soldiers' and Sailors' Orphans Home Hospital in Xenia, the University and St. Francis hospitals; trustee, Otterbein College; died Oct. 15, 1946, aged 82.

Charles Darwin Enfield ⊕ Louisville, Ky.; born in Jefferson, Iowa, July 7, 1887; Rush Medical College, Chicago, 1909; interned at Kansas City General Hospital in Kansas City, Mo.; specialist certified by the American Board of Radiology; a member of the medical advisory board of Selective Service, the Association for the Study of Neoplastic diseases, Southern Medical Association, American Roentgen Ray Society and the American College of Radiology; radiologist at St. Anthony's Hospital, Norton Cancer Clinic and Norton Memorial Infirmary; died Nov. 14, 1946, aged 59.

George Frederick Beachler, Cleveland; University of Wooster Medical Department, Cleveland, 1895; died in the University Hospital Nov. 27, 1946, aged 78, of bronchopneumonia.

Charles Bernhardt Behrens, Los Angeles; College of Medical Evangelists, Los Angeles, 1935; member of the American Medical Association; diplomate of the National Board of Medical Examiners; accidentally shot and killed Oct. 19, 1946, aged 46.

Rudolph Boenke ⊕ Long Island City, N. Y.; University and Bellevue Hospital Medical College, New York, 1911; member of the American Academy of Dermatology and Syphilology; died Oct. 27, 1946, aged 71, of coronary embolism.

Oscar Winfred Carper, Front Royal, Va.; Medical College of Virginia, Richmond, 1931; interned at the Hazleton State Hospital in Hazleton, Pa.; past president of the Medical Society of Northern Virginia; secretary and past president of the staff of Front Royal Hospital; member of the board of directors of Citizens National Bank of Front Royal; past president of the Front Royal Rotary Club; died in the University of Virginia Hospital, Charlottesville, Oct. 26, 1946, aged 43, of hypernephroma.

John George Carr, Pittsburgh; University of Pittsburgh School of Medicine, 1942; interned at the Mercy Hospital; began active duty as a lieutenant (jg) in the medical corps of the U. S. Naval Reserve in April 1943; promoted to lieutenant; released from active duty in September 1946; served with field hospitals during most of the Pacific war; had seen much action, including the invasions at Saipan and Tarawa; died in Homestead, Pa., Oct. 27, 1946, aged 29, of injuries received in an automobile accident.

Frank Riley Castleman, Columbus, Ohio; Ohio State University College of Medicine, Columbus, 1921; for many years professor of physical education at the Ohio State University; died Oct. 9, 1946, aged 69, of cerebral hemorrhage.

William Chapman Chilton, Jr., Appomattox, Va.; Medical College of Virginia, Richmond, 1943; interned at the Baptist Memorial Hospital in Memphis; began active duty as a first lieutenant in the medical corps, Army of the United States, in December 1943; promoted to captain in January 1945; relieved from active duty on Aug. 8, 1946; died in the Medical College of Virginia Hospital, Richmond, Sept. 20, 1946, aged 30.

Nathan W. Church, Ulysses, Pa.; Jefferson Medical College of Philadelphia, 1893; member of the American Medical Association; served on the board of education, as school physician in Ulysses and as president of the Ulysses Grange National Bank; for many years physician for the New York Central Railroad; died Oct. 16, 1946, aged 77, of cardiac decompensation.

James R. Connell, Wartrace, Tenn.; University of Tennessee Medical Department, Nashville, 1893; served as president of the Middle Tennessee Medical Association; died in October at St. Thomas Hospital in Nashville, aged 80.

Robert Elisha Downing, Lexington, Ky.; Emory University School of Medicine, Atlanta, Ga., 1930; specialist certified by the American Board of Radiology; member of the American Medical Association, Radiological Society of North America and the American College of Radiology; on the staff of the Good Samaritan Hospital of Lexington; served during World War II; died in Brewton, Ala., Oct. 5, 1946, aged 41, of coronary occlusion.

Melvin Dresbach, Philadelphia; Ohio Medical University, Columbus, 1903; served on the faculties of the Cornell University in Ithaca, N. Y., Albany (N. Y.) Medical College, Ohio State University and Starling-Ohio Medical College in Columbus; member of the American Physiological Society and of the Society for Experimental Biology and Medicine; died Oct. 15, 1946, aged 72, of coronary occlusion.

Frederick York Durrance ⊕ Houston, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1925; specialist certified by the American Board of Radiology, Inc.; member of the Radiological Society of North America, Inc., and the American College of Radiology; associate professor of radiology at the Baylor University College of Medicine; chief of the radiologic department of the Hermann Hospital; died Oct. 29, 1946, aged 53, of coronary thrombosis.

Henry Theodore Foshager ⊕ Clara City, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1909; died in Stoneham township Oct. 19, 1946, aged 65, of injuries received in an automobile accident.

John Paulett Haller, Salem, Va.; Medical College of Virginia, Richmond, 1882; member of the American Medical Association; died Oct. 24, 1946, aged 85, of Parkinson's disease.

Byrt Boone Hutton, Harrisburg, Ill.; Barnes Medical College, St. Louis, 1908; member of the American Medical Association; at one time president of the Saline County Medical Society; on the staff of the Lightner Hospital; died in the Lutheran Hospital, St. Louis, Oct. 22, 1946, aged 62, of atelectasis of the right lower lobe, diverticulum of the sigmoid and cirrhosis of the liver.

John Paul Jones, Mitchell, S. D.; Northwestern University Medical School, Chicago, 1939; member of the American Medical Association; began active duty as a captain in the medical corps, Army of the United States, in Feb. 8, 1941; spent three years in the European theater; discharged as a major Sept. 9, 1945; resumed practice in November 1945; on the staff of St. Joseph Hospital and Methodist State Hospital, where he died Oct. 30, 1946, aged 36, of pneumonia.

John Arthur Kneller, Attica, N. Y.; University of Buffalo School of Medicine, 1912; member of the American Medical Association; served as county coroner and mayor; health officer of Bennington township; died in the Buffalo General Hospital Oct. 20, 1946, aged 57, of nephrosclerosis and hypertension.

George W. McFatrich, Chicago; Bennett Medical College, Chicago, 1891; interned at the Cook County Hospital, where he was ophthalmologist; died in the Passavant Memorial Hospital Nov. 10, 1946, aged 76, of intracranial hemorrhage.

Marion Blanche Neil, Forest City, Iowa; Northwestern University Woman's Medical School, Chicago, 1901; formerly in charge of social welfare work in Winnebago County; died Oct. 9, 1946, aged 68, of coronary artery disease.

Ivo Amazon Nelson, Tulsa, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1925; specialist certified by the American Board of Pathology, Inc.; member of the American Society of Clinical Pathologists; served as pathologist on the staff of St. John's Hospital; associated with the Nelson Pathological Laboratories, which he founded; died Oct. 21, 1946, aged 52, of myocardial failure.

Otto Charles Pinc ⊕ Chicago; Rush Medical College, Chicago, 1924; interned at the Kings County Hospital in Brooklyn; resident physician at the Cook County Infirmary in Oak Forest, Ill.; on the staff of the Bethany Sanitarium and Hospital; captain, medical reserve corps, U. S. Army, not on active duty; died in the Albert Merritt Billings Hospital Nov. 9, 1946, aged 46, of hypertension and cardiovascular disease.

David Giltner Pryor, Jeffersonville, Ind.; University of Louisville (Ky.) School of Medicine, 1931; member of the American Medical Association; president of the staff of the Clark County Memorial Hospital; served as president of the Rotary Club; died Oct. 27, 1946, aged 43, of coronary occlusion.

George W. Sargent, Seneca Castle, N. Y.; Syracuse University College of Medicine, 1879; member of the American Medical Association; served as health officer; died Oct. 1, 1946, aged 93, of arteriosclerosis.

Anton Henry Schaefer, Berkeley, Calif.; Stanford University School of Medicine, San Francisco, 1941; member of the American Medical Association; interned at the Alameda County Hospital in Oakland; served a residency at Ernest V. Cowell Memorial Hospital; died in Alta Bates Hospital Sept. 29, 1946, aged 41, of lymphosarcoma.

Cortlandt Whitehead Schepeler ⊕ Brooklyn, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1915; served during World War I; on the staffs of the Mercy Hospital and the Foote Memorial Hospital, where he died Oct. 27, 1946, aged 55, of cerebral hemorrhage.

Joseph Otto Segura, Jackson, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1910; member of the American Medical Association; vice president and medical director of the Lamar Life Insurance Company; served in England during World War I; died in a hospital at Abbeville, La., Oct. 26, 1946, aged 59, of coronary occlusion.

Jeannette M. Shefferd ⊕ Fall River, Mass.; John A. Creighton Medical College, Omaha, 1912; specialist certified by the American Board of Otolaryngology; member of the New England Otological and Laryngological Society; on the staff of the Union Hospital, where she died Oct. 23, 1946, aged 67, of carcinoma of the colon.

Joseph Scott Snider ⊕ Kansas City, Mo.; University Medical College of Kansas City, Mo., 1900; served during World War I; an Affiliate Fellow of the American Medical Association; on the staff of St. Mary's Hospital, where he died Oct. 29, 1946, aged 70, of carcinoma of the right lung.

Charles C. Snowden, Davenport, Neb.; Jefferson Medical College of Philadelphia, 1882; member of the American Medical Association; died in Lincoln Oct. 25, 1946, aged 91, of pneumonia.

David Henry Stern, Hammond, Ind.; University of Illinois College of Medicine, Chicago, 1937; member of the American Medical Association; served during World War II; on the staff of St. Margaret Hospital, where he died June 13, 1946, aged 38, of coronary thrombosis.

Rae Latham Strong ⊕ Bloomingdale, N. Y.; University of Buffalo School of Medicine, 1899; for many years health officer; on the staffs of Champlain Valley and Physicians hospitals in Plattsburg and General Hospital in Saranac Lake, where he died Oct. 18, 1946, aged 70, of arteriosclerosis.

John William Thomson ⊕ Garrett, Ind.; Rush Medical College, Chicago, 1909; for many years president of the school board; past president of the De Kalb County Medical Society and of the Northeastern Indiana Academy of Medicine; served during World War I; member of the American Association of Railway Surgeons; surgeon for the Baltimore & Ohio Railroad; on the staffs of the Sacred Heart Hospital in Garrett and the McCray Memorial Hospital in Kendallville; died Oct. 17, 1946, aged 60, of uremia.

DIED WHILE IN MILITARY SERVICE

Hubert Benjamin Bradburn ⊕ Lincoln, Ill.; Washington University School of Medicine, St. Louis, 1927; fellow of the American College of Surgeons; formerly city physician; served an internship and as resident physician at the Vanderbilt University Hospital in Nashville, Tenn.; began active duty as a captain in the medical corps, Army of the United States, on July 17, 1942; promoted to major; died in the Walter Reed General Hospital, Washington, D. C., Sept. 4, 1946, aged 45, of mesenteric thrombosis.

Harold Edward Hanley, Richmond Hill, N. Y.; New York University College of Medicine, New York, 1943; interned at the Bellevue Hospital in New York; began active duty as a first lieutenant in the medical corps, Army of the United States, on Oct. 15, 1944; following his assignment in Hawaii was stationed in Japan, where he was attached to the 98th Division and where he died May 23, 1946, aged 27, of a skull fracture received in an accident.

Isaac Newton LaVictoire, Pigeon, Mich.; Yale University School of Medicine, New Haven, Conn., 1928; member of the American Medical Association; interned at the Conemaugh Valley Memorial Hospital in Johnstown, Pa.; served a residency at the Kalamazoo State Hospital in Kalamazoo; at one time affiliated with the State Prison of Southern Michigan in Jackson and the Michigan Reformatory in Ionia; commissioned a lieutenant (jg) in the medical corps of the U. S. Naval Reserve in 1933; began active duty in February 1941; sent to the Philippines and was stationed at Cavite naval base near Manila when the Japanese struck; fought with the navy until the fall of Cavite; moved to Manila, where he fell prisoner of the Japs; imprisoned for three years at the Cabanatuan prison camp; shortly after the invasion of the Philippines by American forces the prison camp was liberated by American rangers and he was one of the 483 American personnel liberated; promoted through the grades to captain; died March 2, 1946, aged 43, of coronary thrombosis and general debility incurred while a prisoner of war of the Japanese.

Maurice James McElligott, Lynn, Mass.; Rush Medical College, Chicago, 1937; member of the American Medical Association and the Illinois State Medical Society; interned at the Boston City Hospital in Boston, where he served a residency; served a residency at the Westfield State Sanatorium in Westfield; captain in the medical corps, Army of the United States; died in Denver April 25, 1945, aged 42, of coronary occlusion.

Frank W. Wilson ⊕ Colonel, M. C., U. S. Army, Swannanoa, N. C.; University of Maryland School of Medicine, Baltimore, 1914; Army Medical School in 1916; Medical Field Service School Advanced Course, Carlisle Barracks, in 1934; born in Greenville, N. C., April 29, 1888; fellow of the American College of Physicians; member of the Medical Association of Georgia; specialist certified by the American Board of Internal Medicine; given a reserve commission in the medical service of the army in August 1915 and appointed to the medical corps in 1916; served on the Mexican border, followed by oversea duty in World War I; had three tours of duty at Walter Reed Hospital in Washington and a long period of service at Fort Benning, Ga.; placed in charge of the Station Hospital at Camp Shelby, Miss., in 1940; assigned to command the Moore General Hospital in 1942 when it was established and where he died April 20, 1946, aged 58, of coronary thrombosis.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 30, 1946.

Body Temperature as Guide to Determining the Time of Death

Dr. C. Keith Simpson, medicolegal pathologist, who has done remarkable work in the identification of the mutilated and buried remains of a murdered woman, recently gave attention to deciding how long a person has been dead (*Science Progress*, October 1946, p. 713). He holds that the most reliable guide is the steady fall of temperature which takes place for twenty-four hours after death. Under average conditions he finds that about 2.5 degrees F. is lost hourly for the first six hours and from 1.5 to 2 degrees F. hourly for the next six hours. Calculations based on these figures may be upset by extremes of temperature, the amount of clothing worn, ventilation and environment. Thus a body in a river will reach the temperature of the surrounding atmosphere much more quickly than one on dry land. If parasites such as fleas and lice are present, the entomologist may help by finding out whether they are still alive and, if so, how long it takes to revive them. Adipocere may hinder rather than help, for hydrogenation of body fat is variable. With warmth it may take place in three or four weeks or it may be delayed beyond the four or five months which is the average in England. The onset of rigor mortis or of postmortem lividity is of little use in deciding the time of death. Simpson concludes that in estimating the time of death the most reliance is to be placed on the body temperature. It is never too late, he says, to measure this. Though the body is cold it may still register a few degrees above its surroundings. As an example he cites a murder in which the body temperature was still 7 degrees F. above the temperature of the air, although it had lain eighteen hours in the snow. This made it possible to fix the time of death within an hour.

Government Plan for Taking Over the Voluntary Hospitals

The voluntary hospitals are so called because they were founded and until recent years were entirely supported by the voluntary subscriptions of the charitable. They comprise the great hospitals which are medical schools. Following closely the passage of the National Health Service Act the Ministry of Health has produced an elaborate plan for taking over all the hospitals, though it does not propose to interfere with the autonomy of the medical schools. For purposes of administration the whole country has been mapped into areas, each with a university medical center as a focal point—Manchester, Leeds, Birmingham, Sheffield, Liverpool, Bristol, Newcastle, Cardiff, Oxford and Cambridge. London has four areas, northwest, northeast, southeast and southwest, each extending into the adjacent country. For all these areas regional hospital boards are to be appointed to administer the hospital and specialist services. For the benefit of any observations which may be made the Ministry of Health has issued a circular to the local bodies and organizations concerned. The size and extent of the areas will be determined by their purpose, which is to provide an area adapted rather for the planning, coordination and provision of hospital and specialist services rather than for the control and management of hospitals. The latter task will be the function of hospital management committees. It follows that the areas must be comparatively large in population. The boundaries of the areas will not prevent patients from freely passing from one area to another. Whenever possible the boundaries of the areas should coincide with those of local health authorities, but other important factors, such as association of services with medical schools or grouping of related hospitals with the same regional board, make it necessary to cross such boundaries.

Anglo-French Medical Cooperation in West Africa

At an Anglo-French medical conference held at Accra, Gold Coast, West Africa, a system of cooperation in many aspects of public health and medical work in the West African territories was agreed on. Pathologic laboratories in the area will be used according to geographic convenience rather than international boundaries. It is hoped to organize during the coming year experiments in joint campaigns in frontier areas where the ravages of sleeping sickness, smallpox or yellow fever occur on both sides of the border. The conference had its origin in arrangements for closer Anglo-French cooperation in colonial matters, but experts who attended from the Belgian Congo and from Portugese Guinea and Liberia expressed agreement with the principles underlying the recommendations and their desire to develop similar cooperation.

BUENOS AIRES

(From Our Regular Correspondent)

Nov. 5, 1946.

Discussion on Experimental Diabetes

At a recent meeting of the Sociedad Argentina de Biologia, Drs. B. A. Houssay, R. F. Brignone, A. F. Cardeza and J. G. Sara, of Buenos Aires, reported experiments on dogs which had transient diabetes after the injection of alloxan and which developed permanent diabetes after prolonged treatment with thyroid. This form of metathyroid diabetes from alloxan is a pancreatic diabetes due to lesion on the beta cells of the islands of Langerhans (degranulation and strong diminution in number). The administration of thyroid does not produce diabetes unless the resistance of the pancreas has been diminished and the condition of the pancreatic beta cells has been changed.

Dr. C. Martinez discussed the influence of hyperthyroidism on alloxan and pancreatic diabetes in white rats: (*a*) thyroid administered for twenty consecutive days increases sensibility to alloxan, whereas if it is given for sixty consecutive days it gives the animals a supernormal resistance; (*b*) thyroid treatment of rats after ample pancreatectomy (removal of 95 per cent of the pancreas) causes the appearance of diabetes in the first two weeks of treatment. After this period of time diabetes gradually disappears even if the administration of thyroid is continued; (*c*) thyroid treatment of rats with ample pancreatectomy in the early period of diabetes causes total disappearance of diabetes, and (*d*) the favorable effect of thyroid seems to be due to stimulation of the pancreatic islands and to hyperplasia.

Drs. S. Gitter and A. F. Cardeza discussed the diabetogenic effect of substances with chemical resemblance to alloxan, namely, alloxantin, methylalloxan and dialuric, barbituric and violuric acids. Two different histologic types from the diabetogenic effect are observed in the islands of Langerhans: (*a*) coagulation necrosis of the beta cells (from alloxan, alloxantin and dialuric acid) and (*b*) degeneration of the beta cells without coagulation necrosis (from either barbituric or violuric acids).

Drs. B. A. Houssay and P. Mazzocco discussed the effects of either diethylstilbestrol or alloxan on glycemia and glycogen in rats. Administration of sugar after fifteen hours of fasting to rats either normal or with alloxan diabetes, causes a more acute hyperglycemia and a smaller amount of glycogen in the liver and muscles of the latter than in those of the former. Administration of sugar after fifteen hours of fasting to rats, either normal or with alloxan diabetes which had diethylstilbestrol treatment, caused an increase of glycemia, moderate in normal rats and acute in rats with alloxan diabetes. The increase of the hepatic and muscular glycogen was moderate in normal rats and acute in rats with alloxan diabetes.

Dr. Carlos Martinez discussed age in relation to diabetes in rats. Subtotal pancreatectomy (95 per cent) in male rats aged 10 days caused noncomplicated benign diabetes in a small percentage of the animals. In animals aged 547 days, or more, it caused in almost all the early appearance of diabetes of acute course and complicated by acute infections and the early appearance of cataracts. Progressive loss of body weight was acute and mortality high (75 per cent) in this group. In rats aged 60 to 70 days, diabetes occurred in all the animals in the lot. The mortality was 25 per cent in this group. The results of the experiments show that in young animals the pancreas has a better opportunity for regeneration after pancreatectomy. Because of the size of the pancreas at this age, it is probable that the removed portion of the structure is smaller than one believes during performance of experimental pancreatectomy. The number of island cells is greater in young rats than in adult rats.

Drs. E. Moisset de Espanés, B. Weksler and E. Ortega, of Cordoba, reported results of experiments of studies on the toxicity of alpha-fagarine. The following results were encountered: One hundred male rats (Wistar strain) had intraperitoneal injections of alpha-fagarine solutions. The values of the lethal dose (50 per cent) varied from 90 to 117.1 mg. for each kilogram of body weight, in accordance with different methods used for its determination. The greatest tolerated dose is 74 mg. for each kilogram of body weight. The lethal dose (100 per cent) is 196 mg. for each kilogram of body weight. The lethal dose (50 per cent) for dibencyl-methyl-amine in rats, by intraperitoneal route, is 656 mg. for each kilogram of body weight. Consequently alpha-fagarine is 7.17 ± 1.44 times more toxic than dibencyl-methyl-amine. Determinations of the toxicity of alpha-fagarine were also carried out on rabbits. Ten lots of rabbits each had intravenous injections of alpha-fagarine solution in doses which varied from 2 to 4 per cent. The average lethal dose (LD 50) varied between 14 and 20 mg. for each kilogram of body weight, according to the different methods used for the determination. The greater tolerated dose (LD 0) was about 4 mg. for each kilogram of body weight and the 100 per cent lethal dose (LD 100) was 30 mg. for each kilogram of body weight. The response to the effect of alpha-fagarine was more uniform in rats than in rabbits.

Retirement of University Professors

The statute of the National University of Buenos Aires makes 65 the retirement age of professors, unless the person wishes to retire five years earlier. Through a decree, this regulation was modified for all the universities in the country. Professors retire in accordance with the law for civilians working in public administration, by which employees retire at age 55 and after thirty years of work. The new regulation has been applied to the University of Buenos Aires. The professors immediately eligible for retirement according to the new regulation included Drs. B. A. Houssay, Alejandro Ceballos, José María Jorge and Juan A. Gabastou, who were declared dismissed through retirement. Drs. Eduardo Braun Menéndez and R. Foglia of the Faculty of Medical Sciences of Buenos Aires, Oscar Oria and E. Moisset de Espanés of the Faculty of Cordoba and J. T. Lewis of the Faculty of Rosario resigned because of the dismissal of Dr. Houssay.

Dr. Houssay, who is 59 years old, received this news just as he was leaving Argentina to attend special ceremonies in Canada and the United States in celebration of the 25th anniversary of the discovery of insulin. The University of Toronto gave Dr. Houssay the 1945 "Charles Micle" prize for his work in medicine. He delivered important lectures at the University of Toronto, the National Academy of Sciences in Washington, the American Philosophical Society of Philadelphia and other universities. He was recently appointed Professor honoris causa of the Universities of Brazil, Lyon (France) and Montreal.

JAPAN

(From a Special Correspondent)

TOKYO, Nov. 1, 1946.

Reform of Medical Education in Japan

An important innovation in Japanese medicine will be the establishment of a modern internship system throughout the country. Under the guidance of Major S. E. Molten, chief laboratory consultant for the public health and welfare section of general headquarters, an archaic system wherein postgraduate students often remained behind in their university hospitals to work for higher degrees will be abandoned. In prewar Japan these students seldom had an opportunity to assume actual responsibility for patients. An average clinic in these university hospitals could have two interns assigned to each patient. This concentration of young doctors in a few medical centers will cease to be a general characteristic of Japanese medicine as a general reform program of the Education and Health ministries gets under way. It is intended that the number of beds in the metropolitan hospitals which are available for internship assignment will be carefully limited. Present plans, calling for the enforcement of a quota of 10 to 25 patients to the care of one intern, will cause a migration of young interns to smaller cities and prefectural health centers in Japan. It is hoped by allied officials that such a move will tend to liberate Japanese medicine and medical education from their tendency toward citadelism and the throttling effect of academically isolated cliques among members of the profession. Assignment of interns from more than one school to a particular hospital is intended to produce an overlapping of school influences. This should result in an active exchange of specialized knowledge and constructive criticism of personal technics. Example and competition have always proved a major factor in elevation of medical standards.

It would not be incorrect to epitomize this sweeping reform in the intersystem of Japan as the assumption of much greater responsibility on the part of young Nipponese doctors., As part of the general medical reform they will now work as doctors and not students during the period of internship. Older and more experienced doctors will be expected to engender in their disciples the true meaning of responsibility and trust. American public health officers hope that this change will also benefit the experienced doctors and surgeons, for in their meeting and working with young interns who are full of enthusiasm and theory they will be exposed to what is new in turn for teaching what is old but yet true. Major Molton has signified this plan as "the old idea of apprenticeship brought up to date for the benefit of medicine in Japan."

Living Quarters for Interns

Still unsolved by most hospitals in occupied Japan is the problem of adequate living facilities for interns. Since few of the hospitals in this country are operated on a nonprofit basis it is difficult to discuss with them the value of an internship in terms of financial outlay. No immediate remedy is expected by occupation officials. It is hoped that hospitals will come to realize the true value of good interns. The result of this change in attitude should be a healthy competition for young doctors together with concurrent improvement in living quarters and intern pay. Some progress in this matter can already be noted where the "medical center" idea is taking hold in a few large cities. Another change in the curriculum of study-practice followed by Japanese interns since the war, and one employed nowhere else in the world (to my knowledge) is the provision for one month of work by each intern in an approved health center at the prefectural level. Taking the intern out of the Japanese metropolis and sending him to such a local health unit means that he is doing actual field work in the public health sphere of activities. This plan should result in many more doctors who are conscious of problems of a public health nature.

Correspondence

TREATMENT OF VARICOSE VEINS

To the Editor:—Dr. Gerald H. Pratt's article on the Treatment of Varicose Veins, in THE JOURNAL, Nov. 23, 1946, suggesting the use of interval suspension of the distal stem of the resected "blowouts" in varicose vein surgery, proves further to me that the work of Dr. R. Stanton Sherman of San Francisco is the closest approach to complete success. If the workers in this field will refer back to his articles, starting with *California and Western Medicine* in September 1942, through the later ones in the *Annals of Surgery* in November 1944, they will find the anatomic basis for his extensive operative procedure of bilateral high saphenous vein ligation, perforator interruption and stripping, with short saphenous ligation and perforator interruption, as well, in many cases where it is indicated.

The anatomic pattern of the venous system of the lower extremity is easily visualized in cross section roughly as a wagon wheel. The hub represents the deep venous circulation, whereas the rim represents the superficial or saphenous system. The spokes represent the leaking incompetent perforators. Through this system the venous blood circulates, and in cases of varicosis with leaking valves in the saphenous and communicating or perforator veins the greater pressured deep venous blood runs backward to fill the outer system at the many levels of incompetent perforators. The latter, mainly, are the saphenofemoral junction, mid-Hunter canal area and the geniculate and short saphenous veins about the knee and various sites in the leg. The latter have been described in great part by Dr. Linton.

To eliminate "blowouts" per se is not eliminating leaking perforators, as the location of the former does not necessarily signify the location of the entrance of the perforators into the deep system except in the leg at certain sites. The perforators of the thigh and knee run obliquely upward and inward, and their entrance into the deep system is therefore higher than the location of a "blowout," and they must be ligated close to the deep femoral vein, not in the superficial tissues. A "blowout" may also not be at the site of any leaking perforator.

My own operative experience coincides with that of Dr. Pratt in that approximately one fourth to one third of all my cases are ones previously treated with high saphenous vein ligation alone or with interval saphenous vein or "blowout" ligation in addition. There is a great deal more accurate knowledge necessary in regard to the sites of the perforators of the thigh and leg. Sherman has added greatly to our knowledge of these, particularly of the thigh and knee regions, by his contributions. The sites of leaking perforators of the anterior, mesial and posterior leg are also quite well established. The mesial lower leg perforators, 18-20 cm. above the sole of the mesial border of the foot, mentioned by Sherman, are more or less constant offenders. Their presence cannot always be definitely determined before exploration. When the perforator locations are definitely known, we shall then achieve greater success in their elimination and we shall not have to depend on tests for their presence. Leakage from them is present in practically all cases. All tests, at best, are only partially helpful.

Referring back to the similarity of the venous system to a wagon wheel, real success will come only when all spokes of the wheel are interrupted at all levels at which they occur, as far back toward the hub as we can possibly go.

ROBERT A. OSTROFF, M.D., Beverly Hills, Calif.

ENURESIS

To the Editor:—In the November 30 issue of THE JOURNAL a communication from Dr. Edwin E. Ziegler, appearing under Correspondence, recommends the "start and stop" method of treatment for enuresis. I was impressed with this regimen while working in the Behaviour Clinic of the late Dr. Ira S. Wile in 1924 and subsequently used it in my own clinic at the University of Nebraska College of Medicine.

There seems to be one insurmountable difficulty with the procedure. It is true that many enuretic persons, if not all, suffer from a loss of confidence in their ability to control their urinary bladders. The "start-stop" method, in some cases at least, convinces these youngsters that they do have voluntary control if they choose to exercise such control. There was not a single child in my clinic who ever missed an opportunity to express pride and happiness in his achievement, and even bad enuretic patients went from one to several weeks without "accident."

To my chagrin, however, these boys and girls soon began to return in increasing numbers with downcast features, each with the same story. They were so enthusiastic about the procedure that they commenced to practice it in their sleep. In the group was 1 boy aged 11 who was suffering from diurnal enuresis and who was so preoccupied with resentment toward one of his teachers that he began unconsciously to "start and stop" while daydreaming in the classroom. He "guessed" forlornly that he had more confidence in starting than in stopping. His enuresis cleared up shortly after he had been transferred from parochial to public school.

The current belief among pediatricians that enuresis as a bad habit has greater social than medical implications is, in my opinion, logical indeed.

HERMAN M. JAHR, M.D., Omaha.

SUCROSE TOLERANCE TESTS

To the Editor:—In regard to the item on "Sucrose Tolerance Tests," published in Queries and Minor Notes in THE JOURNAL, Sept. 14, 1946, page 116, in which it is stated that sucrose tests have not been done in large enough numbers for statistically significant normals to be established, we think it might be of some help to your correspondent to offer you the results of our investigations on the effects of the ingestion of 100 Gm. of sucrose on the blood sugar and levulose levels in 100 normal persons. These results were communicated to the Physiological Society of Great Britain in 1942. As wartime conditions prevented publication of the complete details, we attach a summary of our results.

Average Normal Values and Standard Deviations After Ingestion of 100 Gm. of Sucrose

Fifty Male and Fifty Female Controls, in Milligrams per Hundred Cubic Centimeters

	Male		Female	
	Blood Sugar	Blood Levulose	Blood Sugar	Blood Levulose
Fasting	83±10	2.6±0.58	78±10	2.2 ±0.3
¾ hr. after sucrose..	123±24	6.6±1.5	110±19	5.5 ±1.2
1½ hr. after sucrose..	89±17	6.7±1.4	84±18	6.2 ±1.2
2 hr. after sucrose....	78±15	5.3±1.0	77±15	5.25±1.1
2½ hr. after sucrose..	77±12	3.9±1.0	73±13	3.9 ±1.0

We have since shown that the sucrose test is a reliable test of liver damage (*Brit. M. J.* **1**:212 [Feb. 12] 1945. Some Early Effects of Exposure to Trinitrotoluene, *Brit. J. Indust. Med.* **2**:74, 1945).

J. R. P. O'BRIEN,
G. HIGGINS,
Department of Biochemistry,
University Museum,
Oxford, England.

ENDOCRINE THERAPY IN MALE STERILITY OF NONENDOCRINE ORIGIN VALUELESS

To the Editor:—Despite the fact that reputable clinicians are now in accord that endocrine treatment of male sterility of nonendocrine origin is futile, such therapy is still widely in vogue. Apparently, even a number of honest physicians are still "trying out" glandular injections for azoospermia and severe oligozoospermia with no endocrine basis whatever. Much of the blame for continuing this therapy undoubtedly falls on the shoulders of some pharmaceutical houses, still advertising treatment of male sterility by hormone injections, etc., based on so-called "clinical reports." On close scrutiny of these "clinical reports" one finds that they consist of either old outdated articles or reports from some physicians whose papers give mute evidence of unscientifically controlled experiments, wild imagination, wishful thinking and probably even microscopic mirages.

In an attempt to reach the masses of physicians to forestall further useless therapy, a few brief notes from a paper to be published in detail elsewhere follow.

On my return from service in 1946, in a follow-up study, I contacted many of my former childless couples and asked to see them. In the years that had elapsed, some had had babies and others had not. Most interesting were the cases of 36 husbands who had received endocrine treatment in my absence. Previouly, I had given each of these men little or no hope for future procreativity. Each had been personally diagnosed as sterile, or so extremely oligozoospermic as to be practically sterile. For example, in this drastic oligospermic class the general status of the semen was such that the observer had to search under the high power for a few spermatozoa—living, dead or otherwise. *In none of these specimens had there been a count of more* than 5 million spermatozoa per cubic centimeter.

In the follow-up, attempts were carefully made to obtain information regarding the type, amount and duration of therapy. It is significant that a number of the physicians contacted, reported to me that they had treated the particular patient in question only as a result of urging from the patient himself or the patient's wife. It was found that all types, doses and combinations of endocrine medicaments had been used, including large doses of estrogens and androgens (now known to be sperm-inhibiting). Treatments lasted on the average about three months.

In the process of rechecking, each of the 36 passed a properly collected specimen. I, personally, examined each semen. The findings were as anticipated. Nine men who had been completely azoospermic were still azoospermic. Twenty-five with severe depletion of spermatozoa were practically unchanged—in not one of these men was any appreciable evidence of improvement found. Two men, in whose semen I had found in 1943 an occasional sperm cell, now showed complete azoospermia following an intensive course of testosterone treatment.

It cannot be too strongly emphasized that the cause of the vast majority of cases of infertility in the male has not yet been determined. Most of them in private practice are nonobstructive, *nonendocrine and without history* of scrotal swelling following mumps. Lowered male fertility, aside from those instances in which a definite cause can be elicited, may simply be a congenital failing. Certainly, endocrine therapy where there is no evidence of endocrine deficiency is foolhardy and at times even deleterious.

May I suggest that restraint be practiced in the treatment of male infertility until some form of proved therapy, supported by reputable scientists, is made available. In this connection, based on the original investigations of McClean and Rowlands (England) with the enzyme hyaluronidase, Kurzrok in this country has reported preliminary experiments using this substance in male infertility which bear watching.

Abner I. Weisman, M.D., New York.

APPARENT SENSITIVITY TO AMIGEN

To the Editor:—I am writing you concerning the clinical report by Harris, Gordon, Gray and Barton on "Apparent Sensitivity to Amigen," which appeared in The Journal, November 30, page 785.

It seems to me not only that this report lacks scientific objectiveness but that the authors have certainly not established any *proof of sensitivity to Amigen.* No evidence was adduced that this reaction was not based on the administration of pyrogen or contaminated solution. There was no culture of the Amigen solution reported or any other study of the material that they gave. The conclusion certainly is not warranted by the evidence which the authors present that the reaction was due to a foreign protein inherent in the manufactured solution. The descriptive literature of the product states that every batch of this material is tested on guinea pigs for its anaphylactogenicity and the absence of protein very carefully established. Since the authors of this report made no effort to prove that protein was present, it seems hardly justified to attribute the reaction to this cause without proof in a case so otherwise involved.

Casein hydrolysates are excellent culture mediums, and reactions to such solutions may occur as a result of contamination or the presence of pyrogens due to poorly washed equipment. The report as an instance of apparent sensitivity to Amigen seems unwarranted by the evidence submitted.

Physicians, I am sure, are deeply interested in proved instances of sensitization or other proved reactions to casein hydrolysate itself, but poorly documented papers of this type are untimely and only confuse the subject by attributing reactions of all types to sensitization without adequately investigating other causes.

H. G. Poncher, M.D., Chicago.

DEMEROL IN ITALY

To the Editor:—The controversy with regard to Demerol appearing in the Correspondence department of The Journal of September 7 has been followed attentively by the Italian medical public.

Demerol in the form of the hydrochloride of methyl-phenyl-piperidyl ethyl carbonate is well known in Europe and has been largely used in Italy. Controversies such as now appear in The Journal on the more or less narcotic character of the drug have happened in Europe. In Germany it was finally decided to list the new preparation among the narcotics and to impose the same regulations on the medical practitioner as were in force for morphine. But in Italy the product has never been classed as a narcotic, and till a few months ago it could be obtained without license from the druggist, as opposed to narcotics. Actually in Italy the product commands a very high price per vial in the black market, but no special prescription (as in the case of morphine) is required from a medical practitioner.

In spite of all the laboratory assertions, use of the drug from 1939 to 1945 has taught us that addiction is also produced with it. We are therefore fully in accord with the authoritative declaration of Dr. Anslinger. But this addiction is less troublesome than that due to morphine, in that it is not so general. Patients with renal colic have come happily through the operation and recovered quickly from "addiction" though used to ten or more vials of Dolantin per day, a phenomenon that is never shown by morphine. Probably it is really due to the chemical relationship with atropine that addiction to it is "selective" among the patients.

Mario Musella, M.D.,
Acacie 27-Vomero,
Naples, Italy.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Privileged Communications: Applicability of Statute to Physicians and Inmates of State Hospital for Insane.—Claimant, a minor, by his guardian, filed suit against the state of New York for damages arising from his having been assaulted by a fellow inmate at the Harlem Valley State Hospital, an institution owned and operated by the state of New York for the observation, treatment and care of the mentally ill. The case was heard in the court of claims of New York.

The claimant and one Benturira had been patients in the Harlem Valley State Hospital for some years prior to the date of the assault, the claimant with a diagnosis of psychosis with mental deficiency and Benturira with a diagnosis of psychosis and epileptic clouded states. On the date of the assault, both individuals had been confined to their beds by means of restraint sheets in the restraint room, which formed part of the ward reserved for the care of the more violent inmates. At about 1:45 a. m. Benturira succeeded in breaking out of his restraint sheet and brutually attacking the claimant, who was still confined and unable to defend himself. As a result of this attack the claimant suffered a fractured nose and various bruises and was rendered permanently blind. At the trial claimant endeavored to introduce into evidence the hospital record of Benturira, contending that this record would clearly establish that the officers and employees of the hospital well knew that Benturira was of a violent and assaultive disposition and that he had escaped from restraint sheets on several occasions. The conclusion sought to be drawn was that in the light of this knowledge the officers and employees were negligent in permitting these two inmates to be confined in the same room without special precautions. The state objected to the introduction of this record on the ground that its contents were privileged communications between the hospital physicians and the patient, within the meaning of section 352 of the civil practice act.

Section 352 of the civil practice act provides, in substance, that a physician shall not be allowed to disclose any information he acquired in attending a patient in a professional capacity and which was necessary to enable him to act in such capacity. It has already been held, the court pointed out, that this professional relationship does not exist between the official physicians of a state hospital and its inmates. In Wigmore on Evidence (ed. 3, section 2285) four fundamental conditions necessary to the establishment of a privilege against the disclosure of communications are set forth: (1) The communications must originate in a confidence that they will not be disclosed; (2) such confidence must be essential to the satisfactory maintenance of the relationship; (3) the relationship must be one which ought to be sedulously fostered; and (4) the injury resulting from disclosure must be greater than the benefit disclosure would afford in disposing of litigation correctly. The privilege here asserted by the state, said the court, fails to meet any of these tests excepting the third. It is extremely dubious that John Benturira considered any communications to the hospital physicians, or any observations made by them, as confidential, and it is difficult to see how either confidentiality or its lack would affect the relationship between such physicians and a mentally deficient patient. Further, any conceivable injury to such relationship resulting from the disclosure of the records at this trial is certainly outweighed by the value of such disclosure in arriving at an informed decision in the case.

Continuing, the court said that, even assuming that the privileged relationship of physician and patient might exist in such an institution, an exception to the privilege appears to be provided by section 84 of the mental hygiene law. This section, after discussing the type of records which must be made relative to the inmates of such institutions, provides:

> Such record shall be accessible only to the director and such officers and subordinates of the institution as he may designate and to the commissioner and his representatives, except on the consent of the commissioner or an order of a judge of a court of record.

Certainly, said the court of claims, in the light of this section, the hospital records of an inmate of a state institution for the care of the mentally ill enjoy no such absolute privilege against disclosure that only the patient can waive it, as is now contended by the state. The section clearly provides that such records may be disclosed to any one, without consulting the patient, on the consent of the commissioner or on the order of a court of record. This court made an order on the claimant's motion directing the state of New York through its physicians and employees to submit to an examination before trial with respect to, among other things, the diagnosis, treatment, care and conduct of John Benturira and also directing the state to submit, for discovery and inspection by the claimant and his attorneys, substantially all of its record relating to the same matter. This order of examination and discovery was such an order of a court of record as is contemplated by section 84 of the mental hygiene law. At the time when this order was under consideration the state not only did not oppose but consented to those portions thereof concerning the examination and inspection with respect to Benturira and did subsequently submit to a lengthy and detailed examination before trial with respect to the diagnosis, treatment, care and conduct of John Benturira and did submit for inspection all of the now disputed records concerning him. No question of privilege with respect to such records was raised by the state at the time when the order was granted, no appeal was taken from the order, and no objections to any questions concerning Benturira were made during the examination. Such conduct on the part of the state would seem to amount to a waiver of the right to claim the benefit of the privilege. It seems adequately established that waiver of the privilege may be implied as well as expressed; that it may be implied from conduct not only at the trial but also in an examination preliminary thereto; and that voluntary disclosures on such a preliminary examination may be given the same effect as formal waiver on the trial. Accordingly the court of claims concluded that the relationship of physician and patient does not exist between state hospital physicians and mentally deficient inmates to the extent that communications between them are absolutely barred from disclosure by section 352 of the civil practice act and that such privilege as may exist under some circumstances is limited by section 84 of the mental hygiene law. This and other contentions having been resolved in favor of the plaintiff, judgment was entered therefor.—*Scolavino v. State, 62 N. Y. S. (2d) 17 (N. Y., 1946).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in The Journal, Jan. 11, page 125.

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Part III.* Durham, Oct. 21-23. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology: *Oral.* Los Angeles, April 11-12. Sec., Dr. P. M. Wood, 745 Fifth Ave., New York.

American Board of Dermatology and Syphilology: *Written.* Various centers, March 24. Final date for filing application is Feb. 17. *Oral.* New York City, April 25-27. Sec., Dr. George M. Lewis, 66 E. 66th St., New York 21.

American Board of Internal Medicine: *Written.* Chicago, March 17. *Oral.* Chicago, April 24-26. Final date for filing application is Feb. 15. Asst. Sec., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

American Board of Neurological Surgery. *Oral.* Examination to be given during the Summer. Applications for examination will be accepted until Feb. 15. Sec., Dr. P. C. Bucy, 912 S. Wood St., Chicago.

American Board of Obstetrics and Gynecology: *Part II.* Pittsburgh. June 1-7. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Ophthalmology: *Oral. All Groups. Parts I and II.* Chicago, October 1947. Final date for filing application is March 1. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Me.

American Board of Orthopedic Surgery: Applications for the next examination for Part I will be accepted until Feb. 1. Sec., Dr. Francis M. McKeever, 1136 W. Sixth St., Los Angeles 14.

American Board of Otolaryngology: *Oral.* St. Louis, April 16-19. Chicago, Oct. 7-11. Sec., Dr. D. M. Lierle, University Hospitals, Iowa City, Ia.

AmericanBoard of Pathology: Philadelphia, June 3-4. Final date for filing application is April 15. Sec., Dr. Robert A. Moore, Euclid Ave. and Kings Highway, St. Louis 10.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. *Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled.* Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Clinical Pathology, Baltimore

16:597-670 (Oct.) 1946

Present Status of Rh Factor. P. Levine.—p. 597.
Contrast Coloring of Media by Dyes in Growing Tubercle Bacilli. Effect of Dyes on Growth of Tubercle Bacilli. H. J. Corper and M. L. Cohn.—p. 621.
*Reactions of Tissue to Cold: Pathology of Frostbite, High Altitude Frostbite, Trench Foot and Immersion Foot. N. B. Friedman.—p. 634.
Cirrhosis of Liver and Diabetes as Related to Hemochromatosis. P. A. Herbut and H. T. Tamaki.—p. 640.
Glycogen Storage Disease of Heart. J. L. Haymond and A. S. Giordano.—p. 651.

Reactions of Tissue to Cold.—Friedman discusses the *pathologic anatomy and pathogenesis* of local injury due to cold on the basis of a study of material collected at the Army Institute of Pathology during World War II. Essential dissimilarity between the lesions of trench foot and of high altitude frostbite was not found. Agglutinative thrombosis resulting in ischemic gangrene can account for the most severe lesions, but some of the changes, particularly those in lipoid rich tissues, may be due to cold directly.

Annals of Otol., Rhin. and Laryngology, St. Louis

55:467-714 (Sept.) 1946 **Partial Index**

Osteomyelitis of Maxilla Secondary to Suppurative Maxillary Sinusitis. H. I. Lillie.—p. 495.
Danger of Unrecognized Anoxia in Laryngology. T. C. Galloway.—p. 508.
Intranasal Medication: Investigation into Relative Merits of Certain Methods of Introducing Fluids into Nose. T. Cawthorne.—p. 519.
Aphonia. C. H. McCaskey.—p. 524.
Intralaryngeal Operation for Cancer of Vocal Cord. F. E. LeJeune.—p. 531.
Endaural Approach to Mastoid for Complete Mastoidectomy, with Report of 43 Operations. G. L. Boyden.—p. 543.
Associated Paralyses of Larynx. C. C. Cody Jr.—p. 549.
Aids in Rhinoplastic Procedures. O. J. Becker.—p. 562.
Cleft Palate. H. G. Beatty.—p. 572.
Rhinosporidiosis. F. R. Spencer.—p. 580.
Tonsillectomy and Poliomyelitis. D. S. Cunning.—p. 583.
Tonsillectomy and Poliomyelitis. E. R. Roberts.—p. 592.

Archives of Dermatology and Syphilology, Chicago

54:377-496 (Oct.) 1946

*Eczematous and Pigmentary Lichenoid Dermatitis: Atypical Lichen Planus. Preliminary Report. D. J. Wilson.—p. 377.
Neurodermatitic Reaction. W. Sachs, C. S. Miller and Margaret B. Gray.—p. 397.
Study on Ulcus Phagedenicum Cutis. A. Dostrovsky and F. Sagher.—p. 408.
Vitamin B Complex in Treatment of Lichenoid Dermatitis. E. S. Bereston and G. Cheney.—p. 425.
Progressive Recurrent Dermatofibroma (Darier Ferrand): Anatomoclinical Study. O. G. Costa.—p. 432.

Eczematous and Pigmentary Lichenoid Dermatitis.—Wilson reports more than 300 cases of lichenoid dermatitis. The disease is protean in its manifestations. At first it was thought that it arose only in New Guinea, but it was observed also in the Mediterranean region. The eruptions can be divided into the dry type, comprising approximately 20 per cent of the cases from the Southwest Pacific, and the exudative type, comprising 80 per cent. Either type may be mild or severe, and both may present complications. The two types may be present in the same person and at the same time. In some cases the lesions first are dry and then become eczematous and again are dry. The cause is not known, although several factors are probably involved, including low vitamin intake, especially vitamin A, quinacrine hydrochloride (atabrine) and allergy. It is believed that vitamin A deficiency predisposes to the disease but that quinacrine hydrochloride is the major factor.

Archives of Ophthalmology, Chicago

36:387-530 (Oct.) 1946

Congenital Encephalo-Ophthalmic Dysplasia. A. C. Krause.—p. 387.
Etiology and Treatment of Blepharitis. Study in Military Personnel. P. Thygeson.—p. 445.
*Retrobulbar Neuritis and Complete Heart Block Caused by Digitalis Poisoning: Report of Case. H. P. Wagener, H. L. Smith and R. W. Nickeson.—p. 478.
Exposure and Fixation of Eye in Early Days of Cataract Extraction. *B. Chance.—p. 484.*

Digitalis Poisoning.—Wagener and his associates observed digitalis poisoning in a man aged 50 who came to the Mayo Clinic because of poor vision, generalized weakness, nausea and vomiting. Two or three months previously he had had extrasystoles and had been given "leaf medicine" one tablet four times daily for about two weeks. After two weeks his medicine had been changed to another "green digitalis tablet"; he had taken one tablet three times daily for six weeks. About two weeks before he came to the clinic his appetite had become poor and he had vomited several times. He had noticed that lights had become yellow and that green grass had assumed a yellow tint. His vision had also become blurred, and he had found himself unable to read. *Bilateral central scotomatous defects* were demonstrated in the fields of vision, and complete heart block was demonstrated by electrocardiography. The vision returned to normal in about five weeks without treatment except for withdrawal of the digitalis *and increasing the amount of fluid ingested by mouth.*

Bull. of the U. S. Army Med. Dept., Washington, D. C.

6:347-490 (Oct.) 1946

Closed Head Injury Syndrome Due to Blast. J. A. Aita and W. Z. Kerman.—p. 411.
Modern Technics for Studying Hemolytic Streptococci. H. F. Swift.—p. 428.
Abdominal Wounds in Western Desert. W. H. Ogilvie.—p. 435.
Japanese Military Psychiatry in Korea. M. M. Berger.—p. 445.
Armored Division Personnel Adjustment Plan. J. F. Zigarelli.—p. 449.
Tuberculosis in Army in North Africa and Italy. G. T. McKean and D. S. King.—p. 452.
Observations on Infectious Hepatitis in Seventh Army, 1944 1945. H. Gowen.—p. 456.
Acrylic Moist Chamber Spectacles and Pinhole Glasses. J. W. Hallett and S. Pittler.—p. 462.
Pressurized Oxygen Therapy. Case Report. J. C. Shrader and N. Kaliss.—p. 466.

Cancer Research, Baltimore

6:593-656 (Nov.) 1946

Effect of Nitrogen Mustards on Viscosity of Thymonucleate. E. C. Gjessing and A. Chanutin.—p. 593.
Effect of Nitrogen Mustards on Ultraviolet Absorption Spectrum of Thymonucleate, Uracil and Purines. *A. Chanutin and E. C. Gjessing.*—p. 599.
Introduction of Neoplasia in Vitro with Virus. Experiments with Rabbit Skin Grown in Tissue Culture and Treated with Shope Papilloma Virus. D. R. Coman.—p. 602.
Effect of Progesterone on Development of Mammary Cancer in C3H Mice. H. Burrows and Cornelia Hoch Ligeti.—p. 608.
Influence of Sex Hormones on Hepatic Lesions Produced by 2 Acetylaminofluorene. *A. Cantarow, K. E. Paschkis, J. Stasney and M. S. Rothenberg.*—p. 610.
Tumors of Salivary and Parathyroid Glands in Rats Fed with 2-Acetylaminofluorene. J. Heiman and Doris Meisel.—p. 617.
Localization of Stratum of Maximum Mitotic *Frequency* in Epidermal Methylcholanthrene *Carcinogenesis* in Mice. E. V. Cowdry, J. H. Van Dyke and B. B. Geren.—p. 620.
Further Studies of Specific Precipitin Antiserums for Protein of Cancer Tissue. III. Relation of Proteins of Different Malignant Tissues to Each Other. L. S. Mann and W. H. Welker.—p. 625.
Transplantable 9,10 Dimethyl 1,2 Benzanthracene Sarcoma in Syrian Hamster. E. D. Crabb.—p. 627.

Georgia Medical Association Journal, Atlanta

35:243-272 (Sept.) 1946

Psychosomatic Gynecology. J. P. Pratt.—p. 243.
Psychosomatic Aspects of Problem Cases in Medicine and Surgery. J. M. Barnett.—p. 250.
Man versus the Ameba. A. H. Bunce.—p. 256.

ACC-No 57

Journal of International College of Surgeons, Chicago

9:511-654 (Sept.-Oct.) 1946

Surgical Treatment of Cancer of Rectum and Pelvic Colon Without Colostomy and with Preservation of Sphincter Muscles. H. E. Bacon, J. P. Fleming, C. H. Smith and M. B. Holoman.—p. 511.

Transplantation of Ureters to Bowel. E. Hess.—p. 517.

Experiments with "Cuto-Omentopexy" and Skin Homotransplantation. F. Mandle and N. Rabinovici.—p. 525.

Simple, Thorough Operative Technic for Excochleation of Disk Herniation. T. Kalima.—p. 531.

Carcinoma of Breast. H. Acuff.—p. 536.

Intra-Abdominal Plastic Repair. W. S. Bainbridge.—p. 542.

Phlebitis, Embolism and Thrombosis. M. Behrend.—p. 552.

Some Items on Treatment of Urethral Strictures: Simplified Operative Method for Impassable Strictures. J. Bitschai.—p. 559.

Late Effect of Radiotherapy on Intestine. A. O. Wilensky.—p. 579.

Treatment of Chronic Osteomyelitis. H. L. Puckett.—p. 581.

Management of Cholecystitis. C. D. Brooks, H. W. Ulch, P. J. Connelly and J. F. Kelly.—p. 589.

Surgical Treatment of Varicose Veins. S. H. Babington.—p. 596.

Gynecomastia: New Surgical Technic. E. F. Malbec.—p. 652.

Journal of Lab. and Clinical Medicine, St. Louis

31:1053-1164 (Oct.) 1946

*Demonstration of Rh Antibodies in Newborn and Further Evidence of Pathogenesis of Erythroblastosis. J. M. Hill and S. Haberman. —p. 1053.

Blood Transfusion Studies: I. Differentiation of Hemolytic and Nonhemolytic Transfusion Reactions. E. B. Flink.—p. 1067.

Id.: II. Survival of Fresh and Stored Transfused Erythrocytes as Determined by Urobilinogen Excretion. E. B. Flink and K. B. Skubi. —p. 1074.

*Blood and Bone Marrow in Infectious Mononucleosis: Review of Literature and Report of 25 Cases. L. R. Limarzi, J. T. Paul and H. G. Poncher.—p. 1079.

Preservatives for Syphilitic Serum, with Special Reference to Use of Merthiolate. C. C. Croft and Lucia L. Smith.—p. 1101.

Secondary Bacillus Pyocyaneus Infection in Meningitis Following Intrathecal Penicillin Therapy. Ruth C. Harris, Lillian Buxbaum and E. Appelbaum.—p. 1113.

Two Dose Dextrose Tolerance Test in Diagnosis of Diabetes Mellitus. J. F. Conner and F. W. Reynolds.—p. 1121.

Detailed Report on Weights and Weight Losses of 24 Men in Santo Tomas Internment Camp. B. H. Brown.—p. 1129.

Comparative Efficiency of Various Liver Function Tests in Detecting Hepatic Damage Produced in Dogs by Xylidine. J. L. Svirbely, A. R. Monaco and W. C. Alford.—p. 1133.

Study of Absorption from Crystalline Insulin Pellets and Solutions at Various Sites in Rabbits. R. C. Page and E. H. Lang.—p. 1144.

Nature of Action of Dimethylaminoethyl Benzhydryl Ether Hydrochloride (Benadryl): Effects on Human Eye. R. Harris, T. H. McGavack and H. Elias.—p. 1148.

Rh Antibodies in Newborn and Pathogenesis of Erythroblastosis.—Hill and Haberman report 10 cases of erythroblastosis in newborn infants which showed relatively good correlation between severity of the disease and antibody titer as demonstrated by the developing test. By using antihuman globulin serum as a routine developing test in suspected Rh isoimmunizations the advantages of this test in respect to its sensitivity for incomplete antibodies were confirmed and its usefulness in demonstrating Rh antibody in the serum of mother and infant was proved. This test also detects specific Rh antibodies not demonstrable with agglutinating or blocking tests. The developing test as applied to the demonstration of adsorbed antibodies on fetal erythrocytes is suggested as a diagnostic test for erythroblastosis. Immediate and adequate transfusion of Rh-negative blood is recommended for hemolytic disease of the newborn. Breast feeding is contraindicated when Rh antibodies can be demonstrated in the maternal or fetal serum or adsorbed on fetal erythrocytes.

Blood and Bone Marrow in Infectious Mononucleosis.—Limarzi and his associates report 25 cases of infectious mononucleosis in 18 men and 7 women between the ages of 13 months and 35 years. The characteristic finding in the differential count was the large number of abnormal "leukocytoid" lymphocytes in the peripheral blood. In spite of this the bone marrow showed a lack of lymphocytic infiltration and replacement of the marrow by lymphocytes seen in cases of lymphatic leukemia. The bone marrow revealed a myeloid hyperplasia and immaturity. Either the "toxic agent" acts on the bone marrow to produce a myeloid hyperplasia and suppresses their delivery to the peripheral blood or the suppression of the myeloid tissue results in a myeloid hyperplasia. Sternal puncture is of aid in the differential diagnosis of benign and malignant types of lymphocytosis.

Journal-Lancet, Minneapolis

66:351-398 (Nov.) 1946

John Charnley McKinley: Personal Appreciation. J. A. Myers. —p. 351.

War Psychiatry and Its Influence on Postwar Psychiatry and on Civilization. E. A. Strecker.—p. 357.

*What Do We Know of Multiple Sclerosis? H. H. Reese.—p. 359.

Brain Changes Associated with Electrical Shock Treatment: Critical Review. B. J. Alpers.—p. 363.

Note on Development of Speech Patterns. R. R. Grinker.—p. 370.

Neuritis Ossificans with Osteogenic Sarcoma in Brachial Plexus Following Trauma: Report of Case. H. W. Woltman, A. W. Adson and K. H. Abbott.—p. 372.

The Psychiatrist Looks at Family Life. D. D. Bond.—p. 377.

Endogenous Toxic Encephalitis. A. B. Baker and D. Daly.—p. 381.

*Occlusions of Arteries Supplying the Brain Stem and Cerebellum. J. E. Skogland.—p. 385.

Psychiatric Care in Hospitals. L. R. Gowan.—p. 389.

Huntington's Chorea in Relation to Heredity of Personality Disorders. B. C. Schiele.—p. 393.

Multiple Sclerosis.—Reese reports 241 cases of multiple sclerosis, 65 of which were studied over a long period. Blood studies revealed a definite tendency to a higher eosinophilia, though allergic signs in history and clinical examination were lacking. Practically all the patients presented a starting hypoprothrombocytopenia. The anticoagulant Dicumarol (3-3'-methylene-bis-[hydroxycoumarin]) was used in 28 cases for from two months to over one and a half years, but no objective improvement was seen. Horton's histamine treatment has given satisfactory results in early and remittent cases of multiple sclerosis. Each case must be tried on rationally acceptable therapeutic schemes, since no specific therapy is available.

Vascular Lesions of Brain Stem and Cerebellum.—Skogland reports 8 cases of clinical syndromes associated with thrombosis of arteries supplying the brain stem and cerebellum in patients who were admitted to the Charity Hospital in New Orleans during the period 1935 to 1943. There were 4 patients presenting the syndrome of the posterior inferior cerebellar artery, 1 with thrombosis of the vertebral artery and 3 with thrombosis of the basilar artery. Cases of thrombosis of the anterior spinal artery and of the superior cerebellar artery are reported in the literature, but there were no admissions of persons thus affected to the Charity Hospital. The close correlation between clinical symptoms and distribution of pathologic changes is emphasized.

Journal of National Malaria Society, Tallahassee, Fla.

5:95-168 (June) 1946

Postwar Malaria Control in Continental United States. M. D. Hollis. —p. 95.

Species Eradication by Means of DDT. H. H. Stage.—p. 99.

*Malaria Mortality and Morbidity in United States for Year 1944. E. C. Faust, A. D. Hess and M. D. Young.—p. 103.

Recent Developments in Use of DDT and Other Mosquito Insecticides and Repellents. E. F. Knipling.—p. 113.

Effect of Deficiencies in Vitamins and in Protein on Avian Malaria. A. O. Seeler and W. H. Ott.—p. 123.

Observations on Bionomics of Principal Malaria Vector in New Hebrides-Solomon Islands. W. J. Perry.—p. 127.

Entomologic Evaluation of DDT Residual Spraying for Malaria Control. G. H. Bradley and R. F. Fritz.—p. 141.

Apparent Anomalies in Behavior of Anopheline Mosquitoes in Southwestern Georgia. O. K. Fletcher Jr.—p. 147.

Experimental Transmission of P. Falciparum by Anopheles Maculipennis Freeborni. R. W. Burgess and M. D. Young.—p. 151.

Three New Anopheline Records from New Guinea. W. V. King and H. Hoogstraal.—p. 153.

Progress in Development of Malaria Control Technics. S. W. Simmons. —p. 157.

*Plasma Quinacrine Concentrations Attained by Subjects Taking 0.1 Gm. of the Drug Daily. E. R. Becker, C. S. Burks and E. Kaleita.—p. 165.

Malaria Mortality and Morbidity.—Faust and his associates present the yearly assessment of the status of malaria in the United States for 1944, based on replies received from a questionnaire sent to the bureau of vital statistics of the forty-eight states. The picture continues to be more favorable every year. The endemic regions in the South have shrunken within the last five years. Malaria deaths outside the South are becoming less frequent, and of those certified the majority have resulted from exposure in the South or outside the United States. However, civilian infections reported to state boards of health do not adequately reflect the malariousness of the respective area. Few states have records approximating the actual number of cases of malaria existing within their area. Few state agencies carried out malaria or antimosquito campaigns in 1944. The discharge to civilian life of military forces with recurring vivax malaria may constitute a serious public health hazard in areas where Anopheles mosquitoes are allowed to breed in numbers, unless antimosquito campaigns continue to be vigorously prosecuted.

Plasma Quinacrine Concentrations.—Military personnel in the vicinity of Ledo, Assam, India, were placed on a suppressive quinacrine regimen of 0.1 Gm. daily (0.7 Gm. per week). Twenty-one volunteers were selected as subjects whose quinacrine concentration of the plasma could be followed. None had taken quinacrine previously. The mean plasma quinacrine levels of 14 of these 21 stabilized within two weeks at values ranging from 21.3 to 26.0 micrograms per liter. Seven others attained somewhat lower means, apparently because this group contained 4 persons who might be called "poor absorbers." None of these 21 exhibited extraordinarily high levels, but in other studies a number of such persons were encountered and most of these showed extreme coloring of the skin.

Journal of Nervous and Mental Disease, New York

104:351-464 (Oct.) 1946

Influence of Emotion on Human Electroencephalogram. R. Cohn.—p. 351.
Combat Exhaustion. L. H. Bartemeier, L. S. Kubie, K. A. Menninger, J. Romano and J. C. Whitehorn.—p. 358.
Closed Head Injury Syndrome Due to Blast. J. A. Aita and W. Z. Kerman.—p. 390.
Criteria for Stages of Pentothal Anesthesia. H. E. Himwich and B. Etsten.—p. 407.
Evaluation of Therapeutic Role of Narcoanalysis in Mental Disorders. D. A. Barbara.—p. 414.
Schistosomiasis of Central Nervous System. J. G. Cutler.—p. 425.
*Porphyria: Neuropsychiatric Aspects in Case of Negro. J. M. Schneck.—p. 432.

Neuropsychiatric Aspects of Porphyria. — Schneck reports that a Negro soldier aged 40 began unexplainably to experience anxiety when in crowds. Later he developed impairment of vision. Concurrent with episodes of weakness accompanied with impaired vision there would be excretion of urine which appeared a deep orange and at times red. Constipation developed. Neurologic examination revealed generalized hyperactive reflexes, except for the absence of knee jerks, which reappeared on repeated tapping of the tendon. An especially interesting fact in the reported case is the sequential relationship of the anxiety episodes to the onset of the physical manifestations of porphyria.

Journal of Nutrition, Philadelphia

32:227-344 (Sept.) 1946

Retention of Nutrients in Cheese Making: IV. Thiamine in Cheddar Cheese Made from Raw and Pasteurized Milk. E. V. Evans, O. R. Irvine and L. R. Bryant.—p. 227.
*Reproductivity and Growth of Albino Rats on Prolonged Daily Intake of Caffeine. G. Bachmann, J. Haldi, W. Wynn and C. Ensor.—p. 239.
Metabolism of Women During Reproductive Cycle: VIII. Utilization of Thiamine During Lactation. Charlotte Roderuck, H. H. Williams and Icie G. Macy.—p. 249.
Id.: IX. Utilization of Riboflavin During Lactation. Charlotte Roderuck, Margaret N. Coryell, H. H. Williams and Icie G. Macy.—p. 267.
Self Selection of Diet: III. Appetites for B Vitamins. E. M. Scott and Eleanor Quint.—p. 285.
Id.: IV. Appetite for Protein. E. M. Scott and Eleanor Quint.—p. 293.
Protein Concentrates as Amino Acid Sources for the Chick: Corn Gluten Meal, Cottonseed Meal and Peanut Meal. C. R. Grau.—p. 303.
Nutritive Value of Protein of Varieties of Legumes and Effect of Methionine Supplementation. W. C. Russell, M. Wight Taylor, Thalia G. Mehrhof and Renate R. Hirsch.—p. 313.
Influence of Single Dose of Alpha Tocopherol Administered to Vitamin E Deficient Rats on Fifteenth Day on Subsequent Growth. H. Kaunitz.—p. 327.
*Evidence of Citric Acid Synthesis in Human Subjects. Juniata E. Strom and Milicent L. Hathaway.—p. 337.

Reproductivity of Rats Given Caffeine.—Albino rats were given a sweetened caffeine beverage as their sole source of fluid throughout their reproductive period. The reproductive capacity as judged by the number of litters and number of offspring was not impaired by the daily ingestion of caffeine.

Evidence of Citric Acid Synthesis in Human Subjects.—Strom and Hathaway maintained 3 normal women for forty-five days on a synthetic diet free from citrates and for twenty-one days on a controlled natural food diet of similar nutritive value but supplying approximately 797 mg. of citric acid daily. Individual variations in daily citrate excretion of 300 to 500 mg. were found on both the synthetic and the natural food diets. These and other observations convinced the authors that citrates in the urine are largely synthesized by tissues rather than coming from body stores.

32:345-466 (Oct.) 1946

*Role and Efficiency of Animals in Utilizing Feed to Produce Human Food. L. A. Maynard.—p. 345.
Adequacy of Intravenous Partial Acid Hydrolysates of Casein and Fibrin for Nitrogen Balance in Dogs. D. V. Frost and W. C. Risser.—p. 361.
Vitamin B. Complex Studies with Diets Differing in Carbohydrate Component. H. R. Skeggs and L. D. Wright.—p. 375.
Further Experiments on Relation of Fat to Economy of Food Utilization: I. By the Growing Albino Rat. E. B. Forbes, R. W. Swift, W. H. James and others.—p. 387.
Further Experiments on Relation of Fat to Economy of Food Utilization: II. By the Mature Albino Rat. E. B. Forbes, R. W. Swift, E. J. Thacker and others.—p. 397.
Dental Caries in Cotton Rat: VIII. Further Studies on Dietary Effects of Carbohydrate, Protein and Fat on Incidence and Extent of Carious Lesions. B. S. Schweigert, Elizabeth Potts, J. H. Shaw and others.—p. 405.
Utilization of Calcium in Soybean Products and Other Calcium Sources. L. J. Schroeder, W. M. Cahill and A. H. Smith.—p. 413.
Vitamin Bc and Its Relation to Beta-Pyracin Lactone in Metabolism of Chick. C. J. Campbell, R. A. Brown, O. D. Bird and A. D. Emmett.—p. 423.
Nutritive Value of Canned Foods: Changes in Vitamin Content of Foods During Canning. N. B. Guerrant, M. G. Vavich, O. B. Fardig and others.—p. 435.
Diet of Mother and Hydrocephalus in Infant Rats. L. R. Richardson and A. G. Hogan.—p. 459.

Efficiency of Animals to Produce Human Food.—Maynard shows that, while the feeding of animals results in a concentration of food nutrients into more palatable and more digestible forms for human use, it also involves wastage. Adjustment of livestock production in the interests of better nutrition for more people should recognize differences among species and feeding operations with respect to (*a*) efficiency of human food production, (*b*) consumption of foods directly useful to man and (*c*) nutritive value of the animal product. Taking these factors into account, it is concluded that milk production should have first priority on feed supplies available. Butter production rates the same priority only to the extent that the skim milk is recovered for human use. Egg production should be ranked above pork production, but broiler production deserves only a low rating. To the extent that beef cattle and sheep utilize range and other roughage not available to dairy cattle, their production should have a high priority rating, but heavy fattening of meat animals is an inefficient use of the basic food supply in relation to human needs.

Journal of Pediatrics, St. Louis

29:417-540 (Oct.) 1946

*Histoplasmin Sensitivity. A. Christie and J. C. Peterson.—p. 417.
Electrophoretic Patterns of Blood Sera in Poliomyelitis and Guillain-Barré's Disease (Encephalomyeloradiculitis). V. C. Kelley, D. R. Briggs and R. A. Jensen.—p. 433.
Baby Grid: Application of Grid Technic to Growth and Development in Infants. N. C. Wetzel.—p. 439.
Effect of Diabetic and Prediabetic Pregnancies on Fetus and Newborn Infant. H. C. Miller.—p. 455.
*Kernicterus in Erythroblastosis Fetalis. V. C. Vaughan.—p. 462.
Importance of Chronologic Records in Management of Allergic Children. A. B. Schwartz.—p. 474.
Nonrachitic Bowlegs in Childhood: Osteochondrosis Deformans Tibiae. D. W. Leonard and L. Cohen.—p. 477.
Influenza Virus Vaccine: Local and Systemic Reactions in Children. H. B. Grant.—p. 485.
*Immune Response to Early Administration of Pertussis Vaccine. W. W. Waddell Jr. and C. S. L'Engle Jr.—p. 487.
Parapertussis Pneumonia: Report of 2 Fatal Cases. W. W. Zuelzer and W. E. Wheeler.—p. 493.
Mistreatment of Congenital Hemolytic Disease (Erythroblastosis Fetalis) by Transfusions of Rh-Positive Blood and Maternal Serum: Case Report. A. S. Wiener and M. A. Hyman.—p. 498.
Erythroblastic Anemia of Cooley: Observations on Effect of Splenectomy Performed on Identical Twins. C. D. Govan.—p. 504.
Erythema Multiforme, with Special Emphasis on Postvaccinal Erythema. M. H. Schwartz and H. D. Brainerd.—p. 512.
Case of Erythroblastosis Fetalis Caused by Isoimmunization with Agglutinogen. B. S. Gruber, A. Litvak and M. Jacobi.—p. 518.
Transfusion of Very Small Infants, Utilizing Pneumatic Pressure. E. F. Patton.—p. 520.

Histoplasmin Sensitivity. — Christie and Peterson performed more than 2,000 histoplasmin tests in various age groups and from a considerable area of the country, including Tennessee, various of the Southeastern states, Pennsylvania, New Jersey and New York. The age relationships in the development of histoplasmin sensitivity, pulmonary calcifications and tuberculin sensitivity and the geographic variations of histoplasmin sensitivity, pulmonary calcifications and tuberculin sensitivity are presented. The significance of histoplasmin sensitivity as demonstrated in these studies and the significance of these studies in relationship to the study of the epidemiology of tuberculosis are discussed.

Kernicterus in Erythroblastosis Fetalis.—Vaughan reports 72 cases of erythroblastosis fetalis with 25 deaths. Necropsy was performed in 21 cases. Four of the surviving patients had mental retardation. An unfavorable outcome was associated with the clinical or pathologic signs of kernicterus in 20 cases. In 12 cases of kernicterus there were also focal pulmonary hemorrhages, and these infants displayed a striking clinical picture made up variously of drowsiness, spasticity, opisthotonos, signs of motor irritability, respiratory irregularity, pulmonary rales and rhonchi, and bloody discharge from the upper respiratory tract. Clinical and pathologic features of the cases in which kernicterus was present suggest that blood destruction is not the primary determinant of nuclear damage. Immaturity, vascular injury, altered antigen-antibody reactivity and intrapartum transfer of antibody may play possible roles in the pathogenesis of kernicterus.

Pertussis Vaccine.—Waddell and L'Engle administered deep subcutaneous injections of 0.5 cc. of a vaccine containing 40,000 million killed whooping cough bacilli (phase I) to 129 infants 1 week of age, with a second dose of 1 cc. at 1 month of age and a third dose of 1 cc. at 2 months of age. In order to determine the advisability of a booster dose, 1 cc. of vaccine was administered to 50 previously vaccinated infants at approximately 6 months of age and the agglutinin titer determined one week later. Results showed that it is advisable to start immunization against pertussis from six weeks to two months after birth. A booster dose at seven to eight months may well be given as an added measure of precaution. A satisfactory immune response can be regularly expected when a first dose of pertussis vaccine is administered in the neonatal period. Pertussis vaccine can be safely administered at this early age period without fear of disagreeable local or systemic reactions.

Journal Pharmacology & Exper. Therap., Baltimore

88:109-194 (Oct.) 1946

Effect of Carbon Tetrachloride Induced Liver Injury on Acetylcholine Hydrolyzing Activity of Blood Plasma of Rat. R. W. Brauer and Mary A. Root.—p. 109.
Pharmacology of Penicillic Acid. M. F. Murnaghan.—p. 119.
Hemolytic Anemia as Manifestation of Paraphenylenediamine Toxicity. J. E. Davis.—p. 133.
Antagonism of Tetraethylammonium Against Heart Depressants. O. Loewi. —p. 136.
Relation of Plasma Concentration of Quinacrine to Its Antimalarial Activity. E. K. Marshall Jr. and E. H. Dearborn.—p. 142.
Studies on Pharmacology and Acute Toxicity of Compounds with Marihuana Activity. S. Loewe.—p. 154.
Correlation Between Distribution of Antimony in Tissues and Chemotherapeutic Effect in Experimental Leishmaniasis. A. Gellhorn and H. B. van Dyke.—p. 162.
Some Toxicologic and Pharmacologic Properties of Citrinin. A. M. Ambrose and F. DeEds.—p. 173.
Comparison of Drug Diet Therapy with Single Daily Oral Dosage in Avian Malaria. E. K. Marshall Jr. and E. H. Dearborn.—p. 187.
Effect of Chloroform and Ether on Activity of Cholinesterase. O. Miquel. —p. 190.

Nebraska State Medical Journal, Lincoln

31:389-432 (Oct.) 1946

Urologic Complications of Pregnancy and Labor. R. McCaffery and E. Hess.—p. 392.
Syphilis and Penicillin Therapy. A. C. Curtis.—p. 402.
Progress in Elimination of Permanent Colostomies in Carcinoma of Rectum and Rectosigmoid. R. R. Best.—p. 406.
Cancer Control Program. J. F. Kelly.—p. 412.
Proceedings of Staff, Nebraska Methodist Hospital, J. R. Schenken, Editor: III. Congenital Atresia of Bile Ducts. C. Moore.—p. 415.

31:433-476 (Nov.) 1946

Acute Hepatitis in Civilian Practice. G. B. Eusterman.—p. 436.
Experiences with Late Trench Foot and Frostbite. T. J. Dry.—p. 443.
Medical Management of Graves' Disease. F. Rogers.—p. 447.
Gastrointestinal Allergy. M. H. Brodkey.—p. 451.
Venereal Disease Control in Rural Area. W. B. Quisenberry and J. N. Dudley.—p. 456.

New England Journal of Medicine, Boston

235:501-532 (Oct. 3) 1946

Therapeutic Score Card for Rheumatoid Arthritis: Standardized Method of Appraising Results of Treatment. O. Steinbrocker and A. Blazer. —p. 501.
Chiari's Syndrome: Report of Case. H. L. Hirsh and B. Manchester. —p. 507.
Recurrent Spontaneous Emphysema of Mediastinum with Concomitant Pneumothorax: Report of Case. J. D. Schendstok.—p. 511.
Unilateral Tremor of Lower Extremity: Its Association with Internal Derangement of Ipsilateral Knee. C. J. Sutro.—p. 513.
Present Concepts of Benign Breast Disease. I. T. Nathanson.—p. 516.
Carcinoma of Pancreas, with Metastases to Regional Lymph Nodes, Liver, Lungs and Pleura. Thrombosis of Portal Vein and Right Hepatic Artery. Massive Infarction of Liver.—p. 521.
Cirsoid Aneurysm of Left Gastric Artery, with Secondary Peptic Erosion.—p. 524.

235:533-570 (Oct. 10) 1946

Scarlet Fever: Epidemiologic and Bacteriologic Study of Cases Occurring in Small Community. A. D. Rubenstein and G. E. Foley.—p. 533.
Acute Salpingitis Due to Friedlander's Bacillus: Report of Case. T. W. Botsford and T. D. Kinney.—p. 539.
Cause, Relief and Prevention of Headaches Arising from Contact with Dynamite. A. M. Schwartz.—p. 541.
Terminal Ileitis with Obstruction and Abscess Complicating Pregnancy. W. W. Babson.—p. 544.
Present Concepts of Benign Breast Disease. I. T. Nathanson.—p. 548.
Acute Rheumatic Myocarditis.—p. 554.
Hepatoma, with Portal Vein Invasion and Thrombosis; Cirrhosis of Liver, Alcoholic Type; Esophageal Varices, with Massive Hemorrhage. —p. 557.

235:571-604 (Oct. 17) 1946

Enteric Infections and Their Sequelae. R. A. Lewis.—p. 571.
*Surgical Treatment of Ascites. R. C. Crosby and E. A. Cooney.—p. 581.
Tuberculosis of Genitourinary Tract Among Soldiers in World War II. R. Chute.—p. 586.
Acute Pulmonary Edema, with Special Reference to Experimental Studies. P. H. Henneman.—p. 590.
Embolism of Superior Mesenteric Artery.—p. 596.
Papillary Carcinoma (Grade II A), Involving Upper Half of Bifid Pelvis. —p. 599.

Surgical Treatment of Ascites.—In treating ascites Crosby and Cooney insert a glass button into the lower rectus sheath so that ascitic fluid may drain from the peritoneal cavity into the subcutaneous tissues and be absorbed as edema fluid. Five cases of Laënnec's cirrhosis of the liver and 1 of chronic constrictive pericarditis are reported, in all of which the ascites was treated by the insertion of the button. The rationale for the use of the button is to obviate repeated abdominal paracenteses. Its main advantage over previous surgical measures is its simplicity of application. An additional value is that it returns to the patient his own ascitic fluid together with its protein content as a constant slow clysis as long as the fluid is formed.

235:605-636 (Oct. 24) 1946

*Subacute Bacterial Endocarditis: Report of 2 Cases Successfully Treated witht Penicillin. B. F. Massell and T. D. Jones.—p. 605.
*Hemostasis by Thrombin and Fibrin Foam in Suprapubic Prostatectomy: Analysis of 40 Cases. W. C. Quinby.—p. 609.
Treatment of Mental Illness at Home by Small Doses of Insulin: Appraisal of Results in 12 Cases. N. Cohen.—p. 612.
Significance of Mediastinal Emphysema: 2 Cases. W. P. Vanderlaan and G. Maresh.—p. 617.
Acute Pulmonary Edema, with Special Reference to Experimental Studies. P. H. Henneman.—p. 619.
Strangulation of Bowel by Adhesive Band.—p. 628.
Ewing Tumor of Clavicle.—p. 630.

Penicillin in Subacute Bacterial Endocarditis.—Massell and Jones present the histories of 2 patients with subacute bacterial endocarditis who were cured by penicillin. The resistance to penicillin of the causative organism in 1 case was greater than that of any other successfully treated case reported in the medical literature. The correlation of the clinical picture with the penicillin sensitivity of the causative organism is of interest: 1 patient was extremely ill, and the causative organism was extremely sensitive to penicillin; the other was mildly ill, and the causative organism was relatively resistant to penicillin.

Thrombin and Fibrin Foam in Suprapubic Prostatectomy.—Quinby dissolves thrombin powder in about 10 cc. of isotonic solution of sodium chloride and immerses into it pieces of foam about 1.5 to 2 cm. square. These pieces are then placed in the cavity of the prostate after suprapubic prostatectomy. This method of hemostasis was employed in 40 cases, and it is noteworthy that secondary bleeding occurred in none of the cases. Lavage of the bladder could be abandoned early, and the wound was healed and dry and voluntary urination had been resumed, on the average, eleven and a half days after operation.

North Carolina Medical Journal, Winston-Salem

7:533-584 (Oct.) 1946

Some Aspects of Sex Endocrinology in General Practice. E. C. Hamblen.—p. 533.
*Increase in Diphtheria Incidence in 1945. C. P. Stevick.—p. 540.
The Rh Factor. L. DeCamp.—p. 544.
Rationale for Treatment of Angina Pectoris by Irradiation of Adrenal Glands. W. C. Fisher and R. L. McMillan.—p. 547.
Treatment of Angina Pectoris by Irradiation of Adrenal Glands: Clinical Experience. R. L. McMilland and J. P. Rousseau.—p. 550.
*Effect of Immunization on Epidemic Influenza. T. R. Broadbent and E. E. Menefee.—p. 553.
Exfoliative Dermatitis Caused by Sulfonamides and Its Reproduction by Simple Patch Testing. J. Farrington and B. P. Wolff.—p. 555.
Thumbnail Sketches of Eminent Physicians: Story of Yellow Fever. W. C. Gorgas.—p. 556.

Increase in Diphtheria.—A higher incidence of diphtheria in North Carolina than in the United States as a whole is ascribed by Stevick to the fact that North Carolina has an inadequately immunized population. The major defect in the North Carolina immunization program is that the number of infants receiving a complete primary immunization is inadequate and not that the immunizing agent is ineffective or that new and more virulent strains of the diphtheria organism have developed. It is suggested that immunization of all infants at 6 months of age, followed by the administration of booster doses of the immunizing agent at 1 and 5 years, would afford more adequate protection.

Effect of Immunization on Epidemic Influenza.—During an epidemic of influenza at Duke University 85 male students were vaccinated after the onset of the epidemic, while 1,956 other male students were not immunized. In the vaccinated group the incidence of influenza was 2.3 per cent, while in the control group the incidence was 8.6 per cent. Furthermore, some of the control group developed complications. Broadbent and Menefee conclude that vaccination affords protection against influenza, and they suggest that results might have been even better if immunization had been given somewhat earlier.

Northwest Medicine, Seattle

45:709-796 (Oct.) 1946

Management of Acute Intestinal Obstruction. K. C. Sawyer.—p. 735.
Anesthesia and Analgesia in Obstetrics. E. S. Taylor.—p. 740.
Continuous Spinal Anesthesia in Obstetrics. R. E. Gillett.—p. 743.
Caudal Analgesia for Obstetrics in Private Hospital. J. D. Kindschi.—p. 747.

45:799-884 (Nov.) 1946

Disability Evaluation. H. C. Hughes.—p. 827.
Chylous Cyst of Mesentery in 4 Year Old. T. J. Taylor.—p. 834.
Differential Diagnosis in Right Renal Disease. C. C. Goodhope.—p. 836.
Internal Perforation of Urachal Abscess. H. M. Blegen.—p. 838.
*Use of Curare in Abdominal Surgery. M. A. Howard.—p. 840.
*Cellophane Wrapping and Ligation of Patent Ductus Arteriosus. K. Poppe.—p. 842.
Early Decortication in Clotted Hemothorax and Empyema. H. B. Kellogg.—p. 843.
Benadryl: B-Dimethylaminoethyl Benzhydryl Ether Hydrochloride. J. E. Stroh.—p. 846.
Pulmonary Tuberculosis and Other Thoracic Diseases Among Army Separatees. W. W. Lindahl.—p. 848.
*Delayed Allergic Reaction to Penicillin in Oil and Wax Treated with Procaine Intravenously. L. J. Rosellini and C. W. Van Rooy.—p. 849.

Curare in Abdominal Surgery.—Howard used curare in conjunction with ethylene, cyclopropane, ether and sodium pentothal in anesthetizing 208 patients who underwent abdominal operations such as appendectomy, colostomy, bile duct exploration, hemorrhoidectomy, herniaplasty and hysterectomy. From 1 to 7 cc. of the curare *preparation intocostrin* was administered in divided doses. Curare provided excellent relaxation without undue risk. There was no operative mortality.

Cellophane Wrapping and Ligation of Patent Ductus Arteriosus.—Poppe thinks that cellophane wrapping and ligation is the simplest and safest method of dealing with a patent ductus arteriosus. A physiologically reactive variety of cellophane such as polythene should be used in preference to an inert type. The optimal time for ligation appears to be immediately after the recovery from an acute episode after six or eight weeks of penicillin therapy, before the patient has another attack.

Delayed Allergic Reaction to Penicillin Treated with Procaine Intravenously.—Rosellini and Van Rooy report that a man aged 28 developed a *generalized itching rash* and arthralgia more than a week after he had been given several injections of penicillin in oil and wax for an infraorbital abscess. After conservative methods had failed to counteract the rash, 1 Gm. of procaine hydrochloride was dissolved in 500 cc. of isotonic solution of sodium chloride and was given intravenously over a period of two hours. *Before the infusion* was completed the patient felt better. The urticaria was rapidly disappearing. The joint symptoms were somewhat alleviated.

Ohio State Medical Journal, Columbus

42:993-1096 (Oct.) 1946

Management of Malaria. T. P. Sharkey.—p. 1025.
Etiologic Approach to Chronic Urticaria and Angioneurotic Edema. L. E. Lieder and L. L. Pennock.—p. 1035.
Cyclopropane Anesthesia: Evaluation of Ten Years of Experience. A. A. Brindley—p. 1043.
Use of Pessary as Adjunct to Early Rising in Puerperium. C. W. Pavey.—p. 1047.
Volvulus of Ileum with Intertwining Loops and Knot Formation. C. S. Becker.—p. 1050.

42:1097-1216 (Nov.) 1946

American Democracy and American Medicine. E. J. McCormick.—p. 1129.
Advances in Electrocoma Therapy of Psychoses. J. L. Fetterman.—p. 1133.
Coronary Heart Disease. A. B. Brower.—p. 1137.
Diagnosis of Nontraumatic Intracranial Lesions. W. J. Gardener.—p. 1144.
War Advances Anesthesia. K. C. McCarthy.—p. 1150.
Pharmacology and Therapeutic Aspects of Goiter Thiourea and Thiouracil. H. N. Cavanaugh and C. B. DeCourcy.—p. 1154.

Public Health Reports, Washington, D. C.

61:1397-1424 (Sept. 27) 1946

Typical Structures on Replicas of Apparently Intact Tooth Surfaces. D. B. Scott and R. W. G. Wyckoff.—p. 1397.
Chemoprophylaxis of Experimental Influenza Infections in Eggs. R. H. Green, A. F. Rasmussen Jr. and J. E. Smadel.—p. 1401.
Separation of Complement Fixing Agent from Suspensions of Yolk Sac of Chick Embryo Infected with Karp Strain of Tsutsugamushi Disease (Scrub Typhus). Ida A. Bengtson.—p. 1403.

61:1425-1468 (Oct. 4) 1946

Tuberculosis Control in Denmark. J. Holm.—p. 1426.
Tuberculosis Mortality in Major Cities: United States, 1944. Elizabeth H. Pitney and R. V. Kasius.—p. 1443.

61:1469-1500 (Oct. 11) 1946

Study of Rodent Ectoparasites in Mobile, Ala. L. C. Cole and Jean A. Koepke.—p. 1469.

61:1501-1528 (Oct. 18) 1946

Industrial "Control Chart" Applied to Study of Epidemics. W. H. Rich and M. C. Terry.—p. 1501.
Evaluation of Three Plague Vaccines Against Infection in Guinea Pigs Induced by Natural and Artificial Methods. N. E. Wayson, Margaret C. McMahon and F. M. Prince.—p. 1511.

Puerto Rico J. Pub. Health & Trop. Med., San Juan

22:1-136 (Sept.) 1946

*Brucellosis: Review of Its Clinical Manifestations, with Presentation of 12 Cases Occurring in Puerto Rico. F. Hernández Morales.—p. 3.
Hookworm Infestation in Small Town of Puerto Rico. J. Peterson, G. Arbona and Josefina Acosta.—p. 48.
Filarial Survey Among Young Puerto Ricans. Z. T. Bercovitz and H. Shwachman.—p. 66.
Filariasis in Puerto Rico: Note on Family Incidence. F. Hernández Morales and J. Oliver González.—p. 95.
Incidence of Filariasis at Insular Penitentiary for Men. F. Hernández Morales and G. Gonzáles Barrientos.—p. 99.
Roentgen Pathology of Duodenal Ulcer: Observations in Tropical Area. M. Guzman.—p. 106.

Brucellosis.—Hernández Morales reports 8 cases of acute and 4 of chronic brucellosis. The electric refrigerator probably plays a part in the rising incidence of brucellosis in Puerto Rico. Our grandfathers had to boil their milk before drinking it so as to prevent its souring and in this way unwittingly combated the disease. Today, milk can be easily preserved raw; moreover, raw milk is cheaper than pasteurized and is served almost everywhere, especially in restaurants It is also utilized in the making of cheese. No law forbids its use unpasteurized Unless preventive measures are established, the disease will become widespread

Southern Medical Journal, Birmingham, Ala.

39:847-920 (Nov.) 1946

*Vaginal Cell Examination as Routine in Diagnosis: Study of Vaginal and Cervical Cytology as Related to Abnormal Growths. J. E Ayre —p 847.
Histopathology of Common Primary Swellings of Peripheral Lymph Nodes H. A Horn —p 853.
*Primary Tularemia Pneumonia Treated with Streptomycin Report of 2 Cases D. T Smith and R J Atwell —p 858
*Pharmacologic and Radiologic Study of Hemophilia. M. Ostro and D. I. Macht —p 860
Examination of Back Diagnostic Outline for Standardized" Routine. E D McBride —p 867.
Amebiasis R. A Robinson —p 876
Coexistent Hookworm and Tuberculosis T C. Black —p 881
Chronic Infestation with Intestinal Parasites in Engineer Battalion with Particular Reference to Schistosoma Japonicum W. B Martin, J. G Graziani, J Collins and D R Lincicum —p 885
Infections of Neck Following Tooth Extractions V. D'Ingianni —p. 889.
Thouracil: Clinical Evaluation Following Two and One Half Years' Experience D L Sexton —p 891
Diverticula of Digestive Tract Review of Literature, with Observations Based on Survey of 1,000 Consecutive Office Cases W M Ballinger. —p 897
*Appendicitis Clinicopathologic Study W R Moses —p 902
Hydrogen Ion Concentration of Senile Vaginal Mucosa Before and After Estrogenic Therapy K J Karnaky —p 906
Incidence of Pulmonary Consolidations in Mild Asthmatic D O Wright, E M Gold and G Jennings —p 908

Vaginal Cell Examination.—Ayre reviews observations on 2,320 gynecologic cases in which a cytologic study for malignant growths was made Genital cancer has been diagnosed by cytology and confirmed by biopsy in 202 cases. The centrifuge technic and the glycerin method for mailing cytologic specimens are briefly described A group of preclinical, asymptomatic cases has been detected by routine cytologic tests, and a new cell complex has been described in cases showing a linkage of abnormally high cornification (estrogen) with a measurable thiamine deficiency These cases have been grouped as precancerous

Streptomycin in Primary Tularemic Pneumonia.—Atwell and Smith present the histories of 2 Negro boys aged 13 and 17 The two lived in the same room and were exposed to dog ticks and to rabbits brought into the house by their dogs. The date of the exposure could not be determined and no local dermal lesion could be found, but the serums agglutinated tularense antigen The first patient was much more seriously ill than the second and almost moribund at the time streptomycin therapy was started Both patients seemed to improve clinically after about two days of streptomycin In the case of the massive pleural effusion, it seemed that the intrapleural streptomycin was very efficacious in eliminating the organism and in stopping the formation of fluid The doses of streptomycin were rather large, but it was felt that the highly fatal primary pneumonic form of the disease would require more intensive treatment than the milder ulceroglandular type of tularemia

Radiologic Study of Hemophilia.—Ostro and Macht describe investigations which revealed that irradiation with x-rays noticeably shortens the coagulation time of blood specimens from animals and human beings in vitro Two hemophilic patients treated with x-rays over the splenic region showed considerable shortening of coagulation time for some time afterward The authors hope that this preliminary report will stimulate further investigation

Appendicitis.—Moses thinks that appendicitis in its usual form is initiated by obstruction of the lumen of the organ If this obstruction is not relieved, either spontaneously or by surgical intervention, there follows venous obstruction with outpouring of an edematous exudate It is this phase which is usually seen when the viscus is described as "red hot" During this stage the wall comes to act as a permeable membrane to the luminal bacteria with the possibility of a "localized peritonitis" in the absence of demonstrable perforation. If this process of venous obstruction is allowed to persist, arterial occlusion by spasm, extrinsic pressure on the vessel or thrombosis will supervene, with resultant perforation or gangrene, the extent of the necrosis depending on the size of the occluded vessel. The role of bacteria appears to be solely that of a secondary invader.

Surgery, Gynecology and Obstetrics, Chicago

83:417-560 (Oct) 1946

***Subtotal Esophagectomy with High Intrathoracic Esophagogastric* Anastomosis in Treatment of Extensive Cicatricial Obliterans of Esophagus R. H. Sweet —p 417.
Suppurative Cholangitis Complicating Sidetracking Operations of Biliary Tract. J. Zaslow and V. S. Counseller.—p 428.
Surgical Significance of Aortic Arch Anomalies. R. E. Gross and P. F. Ware —p 435.
Thrombophlebitis of Deep Veins in Thromboangiitis Obliterans. J. W. Kahn —p 449
Relative Surgical Curability of Certain Gross Types of Gastric Carcinoma R Schindler —p 453
Management of Plastic Maxillofacial Wounds in Evacuation Hospital. C. H Leech, B C Drum and H F Osterhagen.—p 462.
Transverse Presentation J T Cole and F. Delany —p 473.
*Gastric Cancer. Laparotomy, Resectability and Mortality S. N. Maimon and W L Palmer —p 480.
*Bilateral and Multiple Ruptured Disks as One Cause of Persistent Symptoms *Following Operation for Herniated Disk* F A. Echlin, B. Selverstone and W E. Scribner.—p 485
Metastatic Hypernephroma of Thyroid Gland. R. R Linton, J. D. Barney, H D Moorman and J Lerman —p. 493.
Malformation of Anus and Rectum M S Rosenblatt and A. May —p 499
Management of Osteomyelitis Secondary to War Wounds. K. A Fischer —p 507
Surgical Treatment of Gangrene in Trench Foot H. B Shumacker Jr —p 513
Study of Absorption Characteristics of Surgical Catgut G Haugaard, L A Thoennes and M. J Hall —p 521
Effect of Anticoagulants on Postpartum Bleeding A C Barnes and H. K Ervin —p 528.
*Talc Granuloma A L Lichtman, J. R McDonald, C. F. Dixon and F. C. Mann —p. 531.

Subtotal Esophagectomy in Cicatricial Obliteration.—Three patients with cicatricial obliteration of a large portion of the esophagus as a result of chemical burns were treated by radical esophagectomy In 2 of these the upper limit of the lesion was low enough to make it possible to perform the anastomosis a short distance below the arch of the aorta In the third the proximal extent of the obstructed area was so high that the anastomosis when completed lay behind the level of the jugular notch In this case a subtotal esophagectomy was performed All 3 patients made a complete recovery. Sweet concludes that in cases of intractable stricture of the esophagus resulting from chemical burns an esophagectomy followed by a high intrathoracic esophagogastric anastomosis is superior to any form of external esophagoplasty.

Gastric Cancer: Resectability and Mortality.—Maimon and Palmer analyze the present status of the surgical treatment of gastric cancer with respect to exploratory laparotomy, resectability and postoperative mortality on the basis of 576 patients with gastric carcinoma who were examined over a seventeen year period at the University of Chicago Laparotomy was carried out on 389, or 83.5 per cent, of the 466 patients who followed the advice given The remaining 16.5 per cent were inoperable The resectability rate in the 389 submitted to exploration was 52.1 per cent The resection survival rate in the 203 patients undergoing resection was 73.7 per cent. The mortality in unselected cases of partial resection was 22.6 per cent before 1940 and 16.3 per cent after 1940 The percentage of patients considered operable is increasing; the resectability rates are becoming higher and the postoperative mortalities are decreasing in spite of the greater incidence of complicated and extensive operations Nevertheless the outlook for prolonged survival continues to be limited

Bilateral and Multiple Ruptured Disks.—Echlin and his associates review observations on 60 patients who were operated on for suspected herniation of a lumbar disk. One patient was found at operation to have three ruptured disks, 6 patients two herniated disks and 3 patients a bilateral herniation of an intervertebral disk requiring bilateral removal. In 2 other patients, from each of whom a ruptured disk had been removed elsewhere at the fifth lumbar level, a second herniated disk was found on the same side as the original exploration but in both cases at the interspace above. From another patient who had

had a negative exploration elsewhere at the third lumbar level the authors removed two herniated disks. In still another instance a herniated disk was extirpated at the fifth lumbar level on the left in a patient from whom a herniated disk had been removed elsewhere from the same interspace on the opposite side. Thus 6⅔ per cent of the patients had bilateral and 16⅔ per cent had multiple herniated disks.

Talc Granuloma.—Lichtman and his associates state that the tissue damage caused occasionally by talc is a heavy price to pay for the preservation of a pair of rubber gloves. Granulomatous lesions of the peritoneum, draining sinuses, scar nodules and malfunctioning intestinal stomas were found at secondary operations. Polarized light microscopy was of great value in identifying talc crystals and in studying the pathogenesis of talc granuloma. The authors think that talc granulomas would be recognized more frequently if there were greater use of polarized light microscopy.

83:561-704 (Nov.) 1946

*Nutrition in Pregnancy: Effects of Dietary Deficiency in Pregnancy and Detection and Treatment of Nutritional Deficiency Diseases. C. F. Vilter, D. Morgan and T. D. Spies.—p. 561.
*Gastric Carcinoma: Incidence and Diagnostic Procedures. S. N. Maimon and W. L. Palmer.—p. 572.
Continuity of Fasciae Lining Abdomen, Pelvis and Spermatic Cord. C. E. Tobin, J. A. Benjamin and J. C. Wells.—p. 575.
*Transurethral Resection in Surgical Management of Cord Bladder. J. L. Emmett and J. H. Dunn.—p. 597.
Appendicitis in Cleveland: Final Report. H. W. Green and R. M. Watkins.—p. 613.
Arteriovenous Fistulas of Cervical Portion of Vertebral Vessels. H. B. Shumacker Jr.—p. 625.
*Tendon Transplantation in Hand. H. May.—p. 631.
Further Experiences with Panlaryngectomy for Advanced Carcinoma of Larynx. A. Brunschwig and J. R. Lindsay.—p. 639.
Operative Technic of Thoracolumbar Sympathectomy. J. W. Hinton and J. W. Lord Jr.—p. 643.
Clinical Evaluation of Sotradecol, a Sodium Alkyl Sulfate Solution, in Injection Therapy of Varicose Veins. W. M. Cooper.—p. 647.
Therapy for Soft Tissue Sarcomas: Experimental Study: M. E. Maun, F. C. Jewell and W. F. Dunning.—p. 653.
Transthoracic Operations for Neoplasms of Esophagus and Stomach. G. W. Nagel and J. F. Menke.—p. 657.
Vascular Injuries in War. B. Bradford Jr. and M. J. Moore.—p. 667.

Dietary Deficiency in Pregnancy.—Vilter and his associates present cases which illustrate dietary deficiency in pregnancy. The cases show neuritis of thiamine deficiency in a woman aged 27, pellagrous glossitis in a mother aged 35 in the last trimester of her seventh pregnancy and riboflavin deficiency symptoms in the mother of 8 children during a period of lactation. The principles of treatment for nutritional disease occurring during pregnancy do not differ from those generally prescribed in nutritional deficiencies. They include a high caloric diet including from 120 to 150 Gm. of protein and adequate minerals and vitamins as well as synthetic vitamins directed at the more prominent symptoms and finally a natural source of vitamin B complex such as brewers' yeast, crude liver extract or wheat germ.

Gastric Carcinoma: Incidence and Diagnosis.—On the basis of studies on more than 500 cases of gastric cancer observed over a seventeen year period Maimon and Palmer conclude that the incidence of gastric cancer rises sharply with advancing age, approximately three fourths of the cases occurring after 50. Thus gastric cancer will increase in incidence as the average age of the population rises. Gastroscopy yielded the correct diagnosis in 84.6 per cent of the cases in which it was utilized. X-ray examination provided the correct diagnosis in 91.8 per cent of the cases so examined. "Dyspeptic" symptoms appearing in patients of the "cancer age" warrant prompt roentgenologic and gastroscopic study.

Transurethral Resection in Surgical Management of Cord Bladder.—Emmett and Dunn say that in 1944 one of them (Emmett) reported his experience in 20 cases of true cord bladder in which transurethral resection had been carried out. During the two year period from 1944 to 1946 transurethral resection was carried out at the Mayo Clinic on 45 patients who had neurogenic bladder resulting from injury or disease of the spinal cord. Thirty of these patients were suffering from a transverse lesion of the spinal cord, whereas the neurologic disease of the remaining 15 consisted of multiple sclerosis (7 patients), combined sclerosis (4 patients) and miscellaneous lesions of the spinal cord (4 patients). The authors present a number of illustrative case reports. They conclude that cord bladder no longer is a hopeless situation. Satisfactory vesical function can be restored by mechanical adjustment of the vesical neck and by teaching the patient to use unaffected muscles to aid him to void. Mechanical adjustment of the vesical neck is brought about by transurethral resection.

Tendon Transplantation in the Hand.—May describes and illustrates methods of tendon grafting in various regions of the hand. In stressing the importance of postoperative care he says that it is a common belief that motion, if started early, will prevent the adhesion of tendons, yet the opposite seems to be the case. Early motion favors adhesions not only because of irritation of the surrounding tissue but also because the vascularization of the tendon is disturbed. The author prefers the molded plaster cast splint. The hand is placed in such a position that the suture line is under a minimum of tension. After two and one-half weeks splint and dressings are taken off temporarily and the sutures removed. The forearm and hand are placed from now on daily in a warm saline bath, and active motion exercises are encouraged. The splint is reapplied after the bath. Three weeks after the operation the splint is discarded, and local heat, massage and passive exercises are added to the active exercises.

United States Naval Med. Bulletin, Washington, D. C.

46:1639-1782 (Nov.) 1946

Wartime Log of United States Navy Hospital Ship to 30 June 1943: Part I. M. J. Aston and R. A. Kern.—p. 1639.
*Use of Tantalum in Tendon Reconstruction of Hand. R. C. Pearlman.—p. 1647.
Redundant Duodenum. Radiographic Study. I. H. Slater and A. Lautkin.—p. 1651.
Proctology in U. S. Naval Hospital: Analytic Review of Six Month Period. C. E. Pope.—p. 1658.
*Evaluation of Therapeutic Agents in Plague: Review of Literature. R. F. Platzer.—p. 1674.
Alcohol as Factor in Naval Delinquencies. A. C. Cornsweet and B. Locke.—p. 1690.
Treatment for Otitis Externa in the Tropics. G. O. Dean.—p. 1696.
Colloid Mucostatic Impression Technic for Full Lower Dentures. W. J. Cunningham and M. R. Pope.—p. 1698.
Endogenous versus Exogenous Origin of Reinfection Type Pulmonary Tuberculosis: Case Report. W. H. Harris Jr.—p. 1702.
Capillary Fragility in Rheumatic Fever. H. Montgomery.—p. 1708.
*Penicillin Prophylaxis Against Acute Otitis Media in Scarlet Fever. J. A. Weiss and P. J. Manheims.—p. 1711.
Influence of Combat on Incidence of Intestinal Parasites. H. K. Russell, E. W. Eisenhower and D. J. Roose.—p. 1716.
*Penicillin in Treatment of Louse Borne Relapsing Fever. H. S. Ingraham and R. G. Lapenta.—p. 1719.
Diagnosis and Surgical Management of Thoracoabdominal Wounds Aboard an Assault Transport. J. N. O'Neill.—p. 1724.

Tantalum in Tendon Reconstruction.—So many excellent jobs of tendon reconstruction have been spoiled by adhesions that Pearlman decided to use tantalum foil 0.00025 inch in thickness as an interpositional substance. This has often made it unnecessary to resect a tendon that is scarred and adherent. A tendon with raw surfaces was simply encased within tantalum foil and the foil held in place with catgut ligatures. The tantalum-wrapped tendon was then dropped back into its normal channel. The tantalum foil did not need to be removed. At the end of four to six weeks the tendon was "free" in its channel; the foil was found fragmented and adherent to adjacent tissues. The tendon itself was coated with a glistening layer of cells.

Therapeutic Agents in Plague.—Platzer states that sulfadiazine is the drug of choice in the treatment of plague. It must be given early in doses of 12 to 30 Gm. on the first day and smaller doses for twelve days after the temperature is normal. The best results have been obtained when the combined treatment with antiplague serum and sulfadiazine has been used. Antiplague serum and sulfadiazine are of value prophylactically in cases of exposure to plague.

Penicillin to Prevent Acute Otitis Media in Scarlet Fever.—Weiss and Manheims review observations of 239 cases of scarlet fever. They found penicillin greatly superior to sulfadiazine not only in the prevention of acute otitis media but also in the treatment of active otitic suppuration. Administration of 20,000 units every three hours for five to seven days is recommended.

Penicillin in Louse Borne Relapsing Fever.—According to Ingraham and Lapenta, louse borne relapsing fever appeared in Egypt after an absence of over twenty years. Penicillin was tried in a series of 52 cases, and 53 served as controls. The disease was relatively mild, with a fatality rate of 5 per cent in the untreated cases. The initial bout of fever lasted seven days on the average, with termination by crisis. The remission averaged eight days in length, followed by an abrupt recurrence in which the mean duration of symptoms was four days. A second relapse was unusual in this epidemic. Penicillin was given intramuscularly every three hours in 25,000 unit doses up to a total of 1,000,000 units. Cure was obtained in all 52 cases and no relapse followed, whereas in the controls relapse occurred in 87 per cent of the cases.

Urologic & Cutaneous Review, West Palm Beach, Fla.

50:517-580 (Sept.) 1946

Urinary Extravasation. D. E. Beard.—p. 517.
Lymphogranuloma Venereum: Report of Case in Child. H. L. Weinstock and S. Keesal.—p. 520.
Ectopic Pelvic Kidney: Report of Case with Huge Hydronephrosis. D. P. Slaughter and N. J. Heckel.—p. 522.
Unusual Renal Obstruction Following Trauma. O. S. Culp.—p. 524.
Thromboangiitis, Phlebitis and Lymphangitis of Spermatic Cord in Relation to Lymphogranuloma Venereum. W. E. Coutts and R. Vargas Zalazar.—p. 526.
Male Infertility. R. J. Douglas.—p. 529.
Malignancies of Urinary Tract: Five Year Survey, with Report of Unusual Case. R. P. Beatty.—p. 531.
What Part Does Posture Play in Ischemia and Stasis of Pelvic Organs? Description of Fatigue by Tests and Report of Cases. F. H. Redewill.—p. 535.
Treatment of Dermatophytid. A. A. Holbrook.—p. 542.
Epidermolysis Bullosa Hereditaria. M. M. Robinson.—p. 545.

Yale Journal of Biology and Medicine, New Haven

19:1-140 (Oct.) 1946

*Tubercle Bacillus and Fundamental Chemotherapeutic and Antibiotic Action. H. J. Corper and M. L. Cohn.—p. 1.
*Oxygen Pressure Gradient Between Maternal and Fetal Blood in Pregnant Sheep. D. H. Barron.—p. 23.
Hemagglutination Induced by Viruses. B. A. Briody Jr.—p. 29.
*Probable Role of Histamine in Some Emotionally Precipitated Allergic Conditions. W. T. Brown.—p. 63.
Electrophoresis in Medicine. K. G. Stern and Miriam Reiner.—p. 67.
Use of Micro-Organisms for Therapeutic Purposes. H. W. Florey.—p. 101.
Early Surgical Operations. H. W. Jones.—p. 119.
Familial Periodic Paralysis: Report of Case Showing No Changes in Serum Potassium Level, with Description of Electroencephalographic Findings. C. W. Watson.—p. 127.

The Tubercle Bacillus and Chemotherapeutic and Antibiotic Action.—Corper and Cohn say that streptomycin administered in proper dosage is capable of retarding the growth of human tubercle bacilli both in vitro and in vivo. However, the concentration of streptomycin required to retard the growth of tubercle bacilli in vitro in good nutrient medium can be attained in vivo for only a brief period. Streptomycin is not tuberculocidal but produces its effects in vivo primarily as a retardant of the growth of tubercle bacilli when they are actively developing or reproducing. In clinical tuberculosis in man, the bacilli appear to reproduce and develop only at irregular periods undeterminable by clinical means and over long periods of time, and this reduces the applicability of a retardant without tuberculocidal action for use in human tuberculosis.

Oxygen Pressure Gradient Between Maternal and Fetal Blood.—Oxygen pressures were determined on sheep in the fetal umbilical artery, umbilical vein, uterine artery and uterine vein in the latter half of the gestation period. It was found that the pressure gradient favors the movement of oxygen from the maternal to the fetal blood.

Histamine in Allergic Conditions.—A man aged 34, who had a history of many allergic sensitivities (e. g. strawberries, tomatoes) presented the same clinical manifestations—generalized urticaria, rhinitis, sneezing, conjunctival hyperemia with profuse lacrimation and stomach discomfort with indigestion, burning, belching and nausea—after emotional excesses or contact with specific allergens. Brown thinks this case suggests that histamine plays a role in emotionally precipitated conditions that resemble allergies. Benadryl, which exerts an antihistamine action, was prescribed and it relieved the emotionally precipitated urticaria.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

69:73-156 (June) 1946

Occlusion of Basilar Artery—Clinical and Pathological Study. C. S. Kubik and R. D. Adams.—p. 73.
Anosognosia and Disorders of Body Scheme. P. H. Sandifer.—p. 122.
Coughing and Unconsciousness: So-Called Laryngeal Epilepsy. A. F. Rook.—p. 138.
Effect of Rupture of Perineurium on Contained Nerve Fibers. S. Sunderland.—p. 149.

British Journal of Surgery, Bristol

34:1-108 (July) 1946

Hazards of Parachuting. P. Essex-Lopresti.—p. 1.
Inguinal Hernia: Unpredictable Result. W. J. M. Brandon.—p. 13.
*Surgical Treatment of Carcinoma of Esophagus: with Special Reference to New Operation for Growths of Middle Third. I. Lewis.—p. 18.
Chronic Osteomyelitis, The Sequel to Gunshot Wound. G. Perkins.—p. 31.
Study of Fate of Nerve Homografts in Man. R. Barnes, P. Bacsich, G. M. Wyburn and A. S. Kerr.—p. 34.
Analysis of Series of 454 Inguinal Hernias with *Special Reference to* Morbidity and Recurrence After Whole Skin Graft Method. G. B. Mair.—p. 42.
Case of Albright's Syndrome (Osteitis Fibrosa Disseminata). R. C. Murray, H. J. R. Kirkpatrick and E. Forrai.—p. 48.
Saccular Diverticulosis of Jejunum Due to Reticulum Cell Sarcoma. A. G. Williams and J. H. Fodden.—p. 57.
Further Review of Interinnomino-Abdominal Operation, Based on 21 Personal Cases. G. Gordon-Taylor and D. H. Patey.—p. 61.
Discussion on Treatment of Injuries to Hand. F. T. Moore.—p. 70.
Dislocation of Inferior Radio-Ulnar Joint. J. F. Curr and W. A. Coe.—p. 74.
Case of Acute Anaerobic Streptococcal Infection of Neck of Dental Origin. C. G. Boothroyd and C. Macleod.—p. 78.
Derangement of Midgut Rotation Producing Volvulus: Report of 2 Cases. C. E. P. Mardby.—p. 80.
Resection of Head of Pancreas. C. A. Pannett.—p. 84.
*Brodie's Disease of Breast. D. Aiken.—p. 87.

Carcinoma of Esophagus.—Lewis reports 7 cases of esophagectomy with 5 recoveries. He describes a new operation of resection with immediate anastomosis for cancer in the middle third of the esophagus. After mobilization of the stomach by laparotomy, a right transpleural esophagectomy is performed, the stomach being brought up through the dilated hiatus, fixed at any required level in the right pleura, and an end to side esophagogastrostomy performed.

Brodie's Disease of Breast.—Aiken reports a case of Brodie's tumor in a woman aged 68. The tumor was removed, and there was no recurrence. The author stresses that the term "Brodie's tumor" should be reserved for large, excessively cellular and long-neglected fibroadenomas. The history of a preexisting breast tumor of many years' duration which at first grows slowly or not at all and finally in the late middle years increases rapidly in size is the outstanding feature of Brodie's tumor. The skin overlying the tumor is mobile, and the lymph nodes are not usually involved. Enlargement may be so great that ulceration of the skin occurs from pressure necrosis, and the foul, fungating mass suggests a carcinoma. Sometimes the correct diagnosis of an innocent large tumor is impossible until the breast is removed. One striking clinical feature is the excellent general condition of the patient.

Edinburgh Medical Journal

53:465-528 (Sept.) 1946

*Sarcoidosis—A Manifestation of Tuberculosis. C. Cameron and E. K. Dawson.—p. 465.
Observations on Functional Heart Disease. I. G. W. Hill.—p. 485.
Ear-Pit (Congenital Aural and Pre-Auricular Fistula). I. Aird.—p. 498.
Tuberculosis in Sutherland with Special Reference to Surgical Tuberculosis. B. S. Simpson.—p. 508.

Sarcoidosis and Tuberculosis.—Cameron and Dawson report a case of pulmonary tuberculosis with pathologic changes in other tissues, which conformed with the accepted clinical and histologic features of sarcoidosis. The case is noteworthy because tubercle bacilli were recovered by culture in a sarcoidosis patient, for one of the salient characteristics of sarcoidosis is the difficulty with which Mycobacterium tuberculosis or any other criteria of the infection can be demonstrated. The history of the patient was a long one, *from the initial disturbance at the* age of 5 to her death at the age of 19. Signs and symptoms varied during this long period. Some lesions, such as the iridocyclitis and splenic enlargement, improved and disappeared; others, like the joint disorder, the kidney lesion and the slight, irregular, varying temperature, remained more or less constant.

Glasgow Medical Journal

27:281-312 (Oct.) 1946

Determination of Total 17-Ketosteroids in Urine Simplification of Method for Routine Use in Hospital Biochemical Laboratory. S. L. Tompsett and E G. Oastler.—p 281.
*Intussusception of Appendix D. C Miln—p 297.
Multiple Carcinoid Tumors of Bowel: Report of Case. A. Lyall.—p. *300*

Intussusception of Appendix.—*Miln* reports the case of a man aged 38 who in October 1945 had an attack of dysentery characterized by gastroenteritis, and severe griping abdominal pain. He was treated with sulfaguanidine, and the condition subsided, though he still complained of some ache in the right side of the abdomen which was worse during defecation. Palpation disclosed a tender mass in the right iliac fossa. Surgical intervention revealed an intussusception of the appendix into the cecum and partly into itself. The appendix was removed together with a small cuff of cecum.

Medical Journal of Australia, Sydney

2:433-468 (Sept. 28) 1946

*Costen's Syndrome: Hitherto Unrecognized Cause of Vague Head Pain. J. C. R. Bell.—p. 433.
Generalized Lymphatic Carcinomatosis (Cancerous Lymphagitis) of *Lungs, with Special Reference to Miliary Carcinomatosis and Syndrome of* "Granulie Froide." C. G. Lambie and J. Collier.—p 439.
Klinefelter Reifenstein Albright Syndrome H. F. Bettinger and B. Robinson—p 446
Toxoplasmic Encephalomyelitis, with Report of 2 Cases. E. G. Robertson—p. 449.

Costen's Syndrome and Head Pain.—Bell points out that Costen's syndrome is a hitherto unrecognized cause of vague head pain, which many patients have endeavored to describe with but little success. The symptoms are often bizarre. They usually arise because the mandibular condyle does not have a normal position in the articular portion of the mandibular fossa (glenoid fossa) throughout the various excursions of the mandible, these latter movements being controlled by the position of the teeth. The symptoms include dull pain within and about the ears; a "low buzz" type of tinnitus; a stuffy sensation in the ears; catarrhal deafness and dizzy spells which are relieved by inflation of the eustachian tubes; tenderness to palpation of the temporomandibular joints; sinus headache after sinus or ocular involvement has been found nonexistent; neuralgia; noisy, painful and either limited or excessive movement of temporomandibular articulation; burning or prickling sensation of tongue, throat and side of nose, and dryness of the mouth. Examination of the mouth and facial characteristics will generally more than hint at the loss of vertical dimension. Costen's syndrome is treated by increasing the maxillomandibular vertical dimension

Thorax, London

1:143-210 (Sept.) 1946

Spreading Suppurative Pneumonitis. T. H. Sellors, L. G. Blair, L. E. Houghton and others—p 146.
Pulmonary Edema. Physiologic Considerations. I. De Burgh Daly—p. 182.
**Effect of* Asbestos, and of Asbestos and Aluminum, on Lungs of Rabbits E J. King, J. W. Clegg and V. M. Rae—p 188.
Bronchiectasis and Atelectasis. Temporary and Permanent Changes. F. P. L Lander.—p 198.

Effect of Asbestos on Lungs of Rabbits.—The purpose of the experiments described by King and his associates was to test whether short fiber asbestos is *less damaging in the lungs* of the rabbit than is long fiber asbestos and whether metallic aluminum will suppress any toxic effect produced by fiber asbestos Four groups of animals were tested All groups showed a foreign body reaction in the lungs. In animals in the long fiber experiments there developed a *nodular* reticulinosis comparable with the experimental silicotic nodule. In animals in the short fiber experiment there developed a diffuse interstitial reticulinosis The addition of *aluminum* did not afford any benefit in any group.

Cadernos Científicos, Lisbon

1:99-240 (May) 1946. Partial Index

*Intradural Lipoma of Cauda Equina. D. Furtado and Vasconcellos Marques.—p. 127.

Lipoma of Cauda Equina.—The lipoma observed by Furtado and Vasconcellos Marques in a woman of 56 is the eighth to be reported in the literature. The differential diagnosis from other intradural tumors is made by the history of slow evolution of the tumor, rheumatic-like pain in the legs, lack of radicular pain and progressive loss of walking in the absence of paralysis. There may or may not be blockage of the spinal canal. Treatment is early surgical removal in order to prevent compression of the spinal cord. Pure intradural lipoma is congenital. It is benign. Differentiation from fibrolipoma or liposarcoma is made only by microscopic study of the tumor.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

90:1023-1062 (Aug. 24) 1946. Partial Index

Spirochetal Infections of Air Passages. L. Koster.—p. 1030.
*Primary Carcinomas of Neck (Branchiogenic Carcinomas). J. Wieberdink.—p. 1034.
Treatment of Hyperthyroidism with Thiouracil T. F. Bloem—p. 1039
Endemic Leprosy. P. H. J. Lampe—p. 1043.

Primary Carcinomas of Neck.—Wieberdink reports observations on 40 patients with branchiogenic carcinoma who were observed in the course of thirty years at the Antoni van Leeuwenhoek Hospital and compares them with 80 cases reviewed by Oliver in 1935. There were 34 men and 6 women, a sex ratio of 6:1, whereas Oliver observed a sex ratio of 9:1. The average age in Wieberdink's 40 cases was 66 years, in Oliver's cases 55 years. As in Oliver's patients, so also in those reviewed by the author, the first symptom was usually a painless swelling. There was a predominance in both groups of localization on the right side. Surgery followed by x-ray treatment has given lasting results. The prognosis in operable cases is definitely better than is usually assumed.

Acta Medica Scandinavica, Stockholm

124:511-606 (July 20) 1946

Investigations of Epinephrine Concentration in Blood: I. Quantitative Chemical Method for Determination of Concentration of Epinephrine in Blood M. Kobro—p. 511.
Continued Investigations into Elimination of Thiamine in Urine. T. Geill and H. Lindholm—p. 522.
Serologic Studies in Experimentally Produced Polyarthritis. P. Hedlund and G. Lofstrom—p. 535.
Influence of Serum Cholesterol Concentration on Cholesterol Deposits Seen *in Xanthomatosis.* M. *Faber.—p 545.*
*Electrocardiographic Findings in Patients with Peptic Ulcer. K. Ørning, C. Sommerfelt and W Fredriksen—p 564.
Investigations on Physiopathology of Erythrocytes: II. Reticulocytosis and Liberation of Erythrocytes from Bone Marrow. A Nizet—p. 590

Electrocardiographic Findings in Patients with Peptic Ulcer.—Ørning and his associates found in studies on 579 ulcer patients with a normal heart that vagotonia manifests itself by bradycardia, respiratory arrhythmia, prolonged PQ interval, and in 10 per cent of the cases by a characteristic electrocardiogram with high T waves in at least two leads. Bradycardia is the most frequent sign of vagotonia, occurring in about 50 per cent of the male and about 25 per cent of the female ulcer patients. Respiratory arrhythmia is seen in about 25 per cent of both sexes A prolonged PQ interval was noted in about 6 per cent of the men and about 3 per cent of the women. High T waves are also seen especially in men, often accompanied by an elevated ST line. These changes are especially pronounced in the younger age groups and are rare in patients over 50. The auriculoventricular conduction time shows increase up to and including the group of 50 to 59 years In ulcer patients with hemorrhage, myopathic abnormalities will be found in about 35 per cent. The cause of these alterations must be sought in a vasomotor reflex with consequent myocardial anoxemia. Atropine, owing to its parasympatheticolytic action, will cause the electrocardiographic changes evoked by the vagus to disappear. A prolonged PQ interval which does not become normal after *administration of atropine* must therefore be occasioned by factors other than vagotonia.

Book Notices

An Introduction to Essential Hypertension. By Richard F. Herndon, M.D., F.A.C.P. Fabrikoid. Price, $2.50. Pp. 88, with 7 illustrations. Charles C Thomas, 301-327, E. Lawrence Ave., Springfield, Ill., 1946.

Here is a concise, readable exposition of the known facts and latest theories on essential hypertension. This little book takes up in orderly fashion the normal regulation of blood pressure and the etiology and mechanism of hypertension, with its physiology, pathology, clinical aspects, prognosis, diagnosis and treatment. Nowhere else has the experimental work of Goldblatt, Page, Prinzmetal, Child, Lewis, Smith and a host of other careful investigators been so successfully yet briefly summarized. The pith of all these experimental data has been clearly and concisely stated and a reasonable theory of the etiology and mechanism of hypertension deduced. However, it is not definitely accepted by the author. The action of renin on preangiotonin to produce angiotonin (hypertension of Braun-Menendez) and destruction of the latter by angiotonase is briefly discussed. The controversial question of the role of renal ischemia in the production of hypertension is fairly stated. The author considers the etiology of essential hypertension still unknown but considers the disease as a "deep-seated, constitutional disorder woven into the very structure and personality of the individual and that it probably represents a composite of multiple factors."

The physiology of hypertension is briefly, probably too briefly, discussed. However, numerous references to pertinent literature are included, making it easily possible for the reader to extend his knowledge of this important aspect of hypertension. The author points out that arterial hypertension may be produced by three mechanisms: increased cardiac output, increased blood viscosity and increased peripheral resistance, but that in essential hypertension the first two are normal and that therefore the immediate cause of the elevated blood pressure must be increased peripheral resistance. He believes this is due to an inherent hypertonus of the arterioles, independent of the nervous system and organic changes in the vessel walls.

The pathology of hypertensive disease is treated simply and accurately, with emphasis on the cardiac and renal changes. It is the extent of the hypertensive lesions in the heart or kidneys which largely determines the clinical picture and the immediate prognosis.

The clinical aspects of the disease are tersely and accurately presented. Four color plates depict the funduscopic appearance in the four groups of the Wagener-Keith classification. The usual course of symptoms associated with so-called benign or essential hypertension is well outlined. The fulminating type, generally known as malignant hypertension, is rightly considered as differing only in the tempo of the disease and is correctly defined as those cases showing the characteristic lesion of papilledema.

According to the author, the prognosis depends on one minor and three major factors. He considers the height of the blood pressure a minor factor. The major factors are the extent of the arteriolar lesions, the degree of atherosclerosis and the cardiac status. The first can be estimated by the funduscopic examination and tests of renal function. The second is dependent more on the duration of the hypertension than on the height of the blood pressure. The third is determined by "the efficiency and sufficiency of the coronary circulation." Age and sex also influence the prognosis.

The diagnosis of hypertension is considered from both practical and theoretical standpoints. He classifies hypertension as essential, nephritic and symptomatic. Under essential he places benign and malignant hypertension. Nephritic is subdivided into parenchymal, vascular, perinephritic and ureteral. Symptomatic hypertension is considered to include physiologic, cerebral, cardiovascular and endocrine disturbances. The discussion of these various forms is brief but on the whole accurate.

The chapter on treatment is somewhat disappointing. One has been led to assume from the up-to-date material in the preceding chapters that the recently published results of surgical treatment would be as carefully analyzed, but such is not the case. The author states that "no treatment is yet known which has ever cured or arrested the progress of essential hypertension, although their temporary palliative value, especially in the early stages, cannot be questioned." He is apparently unaware of the results reported in the extensive postoperative studies published during the last few years. It has been definitely shown that splanchnicectomy does arrest the progress of the disease in many patients, and even more significant is the improvement, including alleviation of symptoms, maintained lowered blood pressure and improvement in cardiac and renal status shown in a high percentage of those operated on, even when the preoperative hypertensive changes were advanced. Although claims of cures have not been made by any surgeons, numerous cases have been carefully studied over postoperative periods up to twelve years with maintained normal blood pressures and restored cardiac and renal status. Contrary to the author's opinion, malignant hypertension is a distinct indication for splanchnicectomy, provided the cardiac and renal functions have not been irrevocably impaired. The other phases of treatment are well covered, although one may not agree that the nitrites are of any real value.

This little book, with the exception of treatment, fulfils its mission "as an introduction to hypertension" well. It really does more than this; it summarizes clearly and concisely the modern concept of the disease and in addition gives a well chosen bibliography. The latter should be of real value to any one interested enough to peruse further the literature on this highly important and still controversial disease. We recommend the work for general reading.

Modern Development of Chemotherapy. By E. Haringa, H. W. Julius, H. Veldstra and K. C. Winkler. Monographs on the Progress of Research in Holland During the War, No. 4. Paper. Price, $3.50. Pp. 175, with 31 illustrations. Elsevier Publishing Company, Inc., 215 Fourth Ave., New York 3, 1946.

This monograph is one in about twenty-four on the progress of research in the Netherlands during the war. Apparently the purpose of the series is to reveal the work undertaken by scientists in the Netherlands during the five years of German occupation. Such revelation is of course interesting to every one concerned with science. However, the monographs present more than historical interest; they contain much factual information, and the modern development of chemotherapy is no exception. For those who are interested in details, this monograph will be of value by making more complete their repository of data. The book is well written, is in English, is made up of good paper and contains a large number of illustrations and tables and extensive bibliographies at the end of each chapter. The contents include discussions on the mechanism of action of the sulfonamides and of para-aminobenzoic acid, divided into bacteriologic investigations, physicochemical investigations, chemical investigations and pharmacologic, immunologic and clinical investigations. There also is a brief discussion of a phase of mycotherapy concerned with Expansine, a derivative of Penicillium expansum. Unfortunately there is no index.

The Artificial Kidney. By Dr. W. J. Kolff, Internist of the Municipal Hospital "Engelenbergstichting," Kampen (Holland), with the cooperation of J. Van Noordwijk. Paper. Pp. 92, with illustrations. J. H. Kok N. V., Kampen, Holland, 1946.

This is a condensed English translation of the original Dutch by W. J. Kolff. The apparatus described as artificial kidney is essentially a vividialyzer. It is operated on the principle of dialysis and is proposed to be utilized for the removal of catabolic products from the blood of uremic patients. The earliest attempts to dialyze blood outside the body was made by Abel, Rowntree and Turner. After many endeavors the author, in cooperation with H. T. J. Berk, constructed an apparatus suitable for clinical use. A good dialyzer must be built on the principle of providing a spread of a small quantity of blood over a large surface; the blood must circulate in a closed system and the blood as well as the rinsing liquid must be maintained in continuous movement. The standard rinsing liquid used in their cases contains 0.6 per cent sodium chloride, 0.2 per cent sodium bicarbonate, 0.04 per cent potassium chloride and 1.5 to 3 per cent glucose. The concentration of the minerals potassium, sodium and chlorine and the alkali reserve is closely observed during dialysis. Kolff employed continuous dialysis in which the blood coming from the radial artery flowed only once through the apparatus and was then returned by way of the radial vein. This was sufficient to remove almost all the urea and other retention products from the blood. The largest quantity of urea removed in one dialysis amounted to 260 Gm. Other retention products removed are residual nitrogen, creatinine, uric acid, indoxyl, xanthoproteine and several chemotherapeutic substances.

The book contains a minute description of this artificial kidney apparatus with a full set of drawings, so that any good instrument maker should be able to construct the apparatus. Accurate instructions are also given for cleaning and sterilizing the apparatus. We are told that the Dutch edition contains a detailed account of the use of the artificial kidney in the treatment of the first 15 patients. Although 14 of the patients have died, the author feels that this cannot be held against the apparatus. It appears that the chances of recovery for these patients were so slight that recovery could hardly be expected. The 1 patient who was cured, he admits, probably would have recovered without the help of the apparatus. However, he insists that definite clinical improvement occurred in patients who appeared in an utterly hopeless condition and that death appeared to be postponed for a considerable time in spite of almost complete anuria.

Synopsis of Pathology. By W. A. D. Anderson, M.A., M.D., F.A.C.P., Professor of Pathology and Bacteriology, Marquette University School of Medicine, Milwaukee, Wisconsin. Fabrikoid. Second edition. Price, $6. Pp. 741, with 342 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1946.

In this edition Anderson continues to present pathology in a concise and compact form. Much of the book has been revised and greater emphasis given to tropical diseases, blast injuries, conditions important in military medicine and the nonbacterial infectious diseases. A discussion of epidemic hepatitis is now included. Although already beautifully illustrated, 78 new illustrations have been added. The references have been brought up to date. While these changes greatly enhance the usefulness of the book for reference or reorientation, they fail to correct its one serious though understandable fault, the superficiality of the first three basic chapters concerning inflammation, repair, regeneration, retrogressive changes and disturbances of circulation. Expansion of these chapters, which would not necessarily increase the size of the book if the unnecessarily large size of many of the illustrations was reduced, would greatly aid beginning medical and dental students and teachers of pathology. In the next edition it is hoped that the author will refrain from using the word pathology incorrectly as the synonym for the terms lesions or pathologic changes.

Modern Drug Encyclopedia and Therapeutic Index. Edited by Alexander B. Gutman, Ph.D., M.D., F.A.C.P., Assistant Professor of Medicine, College of Physicians and Surgeons, Columbia University, New York. Third edition. Fabrikoid. Price, $10. Pp. 1,157. Yorke Publishing Company, Inc., 49 W. 45th St., New York 19, 1946.

This book has become widely known as a reference source for information on the identity of proprietary articles. The third edition, like the preceding two editions, contains for each listed product a statement of composition, the name of the manufacturer, claims for actions and uses, dosage and how it is supplied. As a source of such information this book has real usefulness, but as a therapeutic guide its usefulness is definitely limited because even though the author has apparently attempted to omit "unreasonable claims" there are described many preparations with claims more reminiscent of advertising circulars than of the decisions of a critical therapeutic committee. The table of contents includes a foreword, a glossary, a list of pharmaceuticals, of biologic products and of allergens, a therapeutic index, manufacturers' and distributors' index and a general index.

Sex, Marriage and Family. By Thurman B. Rice, A.M., M.D., Professor of Bacteriology and Public Health, Indiana University School of Medicine, Indianapolis. Cloth. Price, $2.50. Pp. 272. J. B. Lippincott Company, 227 S. Sixth St., Philadelphia 5, 1946.

This book is the condensation of a long-continued interest in the problems revolving around men, women and sex. The author has studied the subject extensively and has talked with many persons of all ages and both sexes about problems in this field. His approach is realistic without the sacrifice of good taste. The book is a frank, complete, candid and idealistic discussion of marriage in the broad sense, dealing not only with sex but with economics, sociology and philosophy in their relation to the married state. He discusses at length the choice of a mate. He deals with wartime dislocations, war marriages and the return of soldiers from war, with the hazards to marriage which are a part of the aftermath of war. Any one who has the courage to face facts will find this book a refreshing source of information, advice and inspiration. All young people should read it before marriage rather than after.

Manual of Nursing Procedures, The Mount Sinai Hospital, New York City. Prepared by the Faculty of the Mount Sinai Hospital School of Nursing, Grace A. Warman, R.N., M.A., Principal. Editorial Committee: Blanche D. Gubersky, R.N., B.S., Bessie I. Wolfson, R.N., M.A., Felixa B. Sulesky, R.N., B.S., and Sylvia M. Barker, R.N. Loose-leaf. Fabrikoid. Price, $3. Pp. 313, with 31 illustrations. Mount Sinai Hospital Press, Fifth Ave. & 100th St., New York 29, 1946.

This compact volume designed to act as a handbook of nursing procedures for nurses in training at the Mount Sinai Hospital, New York, should admirably fulfil that function. It is well organized and well indexed, and the procedures are grouped according to a functional classification which makes reference to a particular procedure relatively easy. Twenty-one drawings give considerable assistance to the text in explaining such procedures as the disinfection of a stool or the setting up of a Wangensteen suction apparatus. Though the descriptions of the nursing procedures are brief, they appear to be adequate. General nursing procedures are covered under the headings of administrative routines, the central supply department, general nursing care, procedures for diagnostic tests and the administration of medicines. Special nursing procedures are included under the titles of medical procedures, procedures for the care of children, surgical procedures, procedures of the specialty services (including otology, ophthalmology, rhinolaryngology and neurology) and nursing care of the orthopedic patient. Operating room procedures and obstetric procedures have not been included in this volume, though a later volume on the former is in preparation. Among the newer procedures described are the intramuscular administration of penicillin, the management of the Wangensteen suction apparatus and the supervision of continuous intravenous infusions and of continuous bladder irrigation apparatus. Among the most valuable inclusions in the appendix are the tables of equivalents, abbreviations, symbols and synonyms.

To those interested in the development of the teaching functions of the nurse it is encouraging to find in Grace A. Warman's foreword the statement that "a knowledge of the patients' social conditions, methods of disease prevention, and the teaching elements of nursing which are included in the present day curriculum help the nurse to take her place in the community as a leader and teacher of health." It is even more encouraging to find the first statement under the method of procedure for treatment of pediculosis in children "Explain the procedure to the patient."

It is to be hoped that this manual will find a well deserved field of usefulness considerably beyond that of the Mount Sinai Hospital School of Nursing.

The Control of Venereal Disease. By R. A. Vonderlehr, M.D., Director, District No. 6, U. S. Public Health Service, and J. R. Heller Jr., M.D., Chief, Venereal Disease Division, U. S. Public Health Service. Foreword by Thomas Parran, M.D., Surgeon General, U. S. Public Health Service. Cloth. Price, $2.75. Pp. 240. Reynal & Hitchcock, 8 West 40th St., New York 18, 1946.

This book is by two doctors, one of whom has been and the other now is chief of the venereal disease division of the U. S. Public Health Service. Through cooperative relationships with state boards of health and secondarily with the larger local health units it has acquired perhaps the most extensive experience outside the armed forces with the venereal disease problem. Even in the armed services the venereal disease problem could be met only with the cooperation of the U. S. Public Health Service.

This book tells how the fight against venereal diseases was brought into the open by shattering the conspiracy of silence which rendered syphilis and gonorrhea unacceptable words on the radio and made discussion of these diseases taboo except in medical circles. The history of syphilis and its cause are discussed and so are the causes of gonorrhea and the so-called minor venereal diseases. A discussion of treatment is included under the title "Doctors Know How to Win." There are chapters on the use of penicillin, case finding, prostitution, rapid treatment, the relationship of venereal diseases to delinquency and vice versa, the influence of the war and present day control measures. Attention is given to a few typical cases indicating psychologic maladjustments as causes for sexual promiscuity and consequent venereal infections.

The book is written primarily for laymen and can be recommended to them for study. Physicians should read it primarily to familiarize themselves with the procedures advocated by public health authorities and the reasons for the recommendations. It is hardly likely that venereal diseases will be controlled by anything less than complete and well coordinated cooperation between doctors, health officials, sociologists, courts, police and the people at large. This book points the way to such cooperation.

Public Health Nursing in Syphilis and Gonorrhea. By Evangeline Hall Morris, Associate Professor of Nursing, Simmons College, Boston. Cloth. Price, $2.25. Pp. 239, with 18 illustrations. W. B. Saunders Company, W. Washington Square, Philadelphia, 1946.

A book written by a nurse for nurses to further education of nurses in venereal disease has long been needed. Miss Morris has produced that book. The first chapters are devoted to a presentation of the medical aspects of the venereal diseases. The chapter entitled "The Patient and His Needs" will be helpful in considering problems with which many patients are faced and will focus the attention of public health nurses on the patients' needs rather than on the disease alone. The suggested methods of epidemiology do not differ materially from what has already been proposed by many writers but bear repetition, since this phase of the venereal disease program is vital in bringing infectious venereal disease to medical attention. The section on clinic services points out the responsibilities of those staffing venereal disease clinics in making the clinic a desirable place for patients to come. Every nurse could profitably study the excerpts from interviews with two different patients. The inclusion of a chapter on family life education is pertinent, because nurses have many opportunities to guide parents, teachers and other groups in helping children toward attaining a wholesome concept of family life and character development. The author concludes the book with a discussion of the functions and preparation of public health nurses in venereal disease and points out opportunities for effective participation.

Toward Mental Health. By George Thorman. Public Affairs Pamphlet No. 120. Paper. Price, 10 cents. Pp. 32, with illustrations. Public Affairs Committee, Inc., 22 E. 38th St., New York 16, 1946.

This pamphlet is a condensed treatment of the mental hygiene problem in the United States during wartimes and after. It deals with fears, psychosomatic symptoms, war neuroses, moods, retreat from reality and such everyday manifestations of mental illness. It touches also on the organic psychoses and on behavior problems in children. It closes with a statement of the need for a national mental health program. It recognizes the National Committee for Mental Hygiene and the National Mental Health Foundation as organizations working toward better mental health. Like many of the Public Affairs pamphlets which deal factually with scientific and social problems and do not venture in the realm of political remedies for medicosocial illness, this is a useful publication which can be recommended by physicians to their patients interested in mental health problems.

The Challenge of Polio: The Crusade Against Infantile Paralysis. By Roland H. Berg. Introduction by Basil O'Connor, President, The National Foundation for Infantile Paralysis, Inc. Cloth. Price, $2.50. Pp. 208. The Dial Press, Inc., 461 Fourth Ave., New York 16, 1946.

This book is issued by the National Foundation for Infantile Paralysis, Inc., and deals, as its subtitle indicates, with the crusade against infantile paralysis. It is dedicated to the late president Franklin Delano Roosevelt, whose name has been so skilfully used to attract attention to the disease from which he suffered. The book is written for laymen with an introduction by Basil O'Connor, president of the National Foundation for Infantile Paralysis. It begins with a historical review of how poliomyelitis hit the headlines and it outlines Mr. Roosevelt's experiences. Research activities and the failure of various hopeful lines of investigation are reviewed. The alum spray fiasco is described. Experience with vaccines is reviewed, and the situation with respect to the Kenny technic and the associated controversy is reviewed. The book is a worth while historical document and a useful current review, particularly for those lay persons who are asked to work on behalf of the drive for polio foundations and for those who are requested to contribute.

The Popular Medical Encyclopedia: The Standard Guide on Health and Disease. By Morris Fishbein, M.D., Editor, Journal of the American Medical Association and Hygeia, the Health Magazine. Cloth. Price, $4.95. Pp. 540, with illustrations. Doubleday & Company, Inc., Garden City, New York, 1946.

This medical encyclopedia is exactly what its title indicates. It is a popular encyclopedia of medical terms from *abdomen* to *zyme*—the latter short for enzyme or ferment. The articles are short, clearly written and informative. It is not a health book or a textbook. It is exactly what its name indicates, that is, a popular encyclopedia. It should be useful in elementary and secondary schools as a student reference book and in teacher training colleges. It deserves a place in the library of the home where there is interest in matters pertaining to health and medicine.

Die interstitielle Nephritis. Von Privatdozent Dr. H. U. Zollinger, Prosektor am Pathologischen Institut der Universität Zürich. Mit einem Vorwort von Prof. Dr. H. v. Meyenburg. Paper. Price, 28 Swiss francs. Pp. 264, with 87 illustrations. New York & Basel: S. Karger, 1945.

The author's purpose is to review for the pathologist the changes which occur in renal interstitial tissue and to supplement this with personal observations and experiments. His thesis is that many of the interstitial reactions of the kidney are due to the deposition in renal lymphatics of abnormal proteins. The illustrations lack clarity. The specialist in renal pathology may find the volume useful for its bibliography. However, the value of a presentation so specialized that it neglects extrarenal pathologic conditions and only glances cursorily at the concurrent parenchymal changes is almost as scanty as its interest to the clinician.

Sex Problems of the Returned Veteran. By Howard Kitching, M.D. Foreword by Ernest R. Groves, Professor of Sociology, University of North Carolina, Chapel Hill, North Carolina. Cloth. Price, $1.50. Pp. 124 New York: Emerson Books, Inc., 1946.

This book is designed to give the veteran some insight into his problems of integration back into normal family life. It is published a year late to be of much help to the large majority of veterans. The general information contained on the subject of sex and marriage seem more applicable to the young and immature individual who is in need of premarital advice than to the returning veteran. The portion of the book dealing with anxiety as it is related to continence, masturbation and extramarital relationships will probably be the most helpful section to the returning veteran who is willing to wade through some of the rather obvious sociophilosophical discussion.

Estudio crítico del tratamiento médico de la insuficiencia cardíaca. Por Blas Moia, doctor en medicina, docente libre de patología médica de la Facultad de medicina de Buenos Aires. Paper. Pp. 107, with 16 illustrations. "El Ateneo," Florida 340, Cordoba 2099, Buenos Aires, 1945.

In this monograph Moia summarizes the indications for and the mode of action of the several forms of therapy in heart failure as he and others in Buenos Aires practice. Included is a brief description of the physiology of heart failure, the use of digitalis and the other regimens which may be employed, among which are diuretics, bleeding, cupping, purgatives, rest, sedatives and opiates, hypertonic glucose and oxygen. The cardiologist who wishes to be brought up to date on the point of view of the Argentine school will find this manuscript useful. It is well documented and has an extensive bibliography.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF *ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY.* ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

INHERITANCE OF PROGRESSIVE MUSCULAR DYSTROPHY

***To the Editor:*—A woman aged 29 has three adult brothers with progressive muscular dystrophy and has lost one brother with the same disease. There is no history of this condition in her ancestry. She is seeking advice as to whether she would be liable to transmit this condition if she were to marry and have children.** **M.D., Ohio.**

ANSWER.—The absence of progressive muscular dystrophy in the immediate ancestry is not unusual, and many cases of this type have been reported in the medical literature. When the observations extend back into the third or fourth generation prior to the appearance of the disease, other cases are frequently disclosed. The appearance of the disease in a single generation is presumptive evidence that progressive muscular dystrophy is propagated by a sex-linked recessive factor. Transmission is effected usually by the females, who do not have clinical signs of the disease, to the males. It would be of value to know the type of progressive muscular dystrophy exhibited in the three brothers of this patient, as there is some variation in the ability to transmit the disease depending on the presenting syndrome.

The means of heredity in progressive muscular dystrophy is not fully known. In the ordinary case, the sex chromosome carrying the dystrophy factor is transmitted by the females of the family for a number of generations. In other instances there may be multiple recessive factors in which the number of factors necessary to induce the condition are fewer for males than for females. Attempts to elucidate the inheritance of muscular dystrophy illustrates the difficulties involved in the application of genetic principles to human problems. The disease probably is inherited in a number of ways. In some families there is transmission by a mendelian dominant; in others by a recessive factor.

The query cannot therefore be answered in a categoric manner. Without more complete knowledge of the appearance of the disease in previous generations, the type of inheritance is not clear. What evidence is available points to the disease in the males only, with probable transmission through the females. The patient would probably have affected male children and nonaffected female children, the females acting as carriers for succeeding generations.

References:

Diehl, F.; Hansen, K., and von Ubisch, G.: Der Erbgang der Dystrophia musculorum progressiva, *Deutsche Ztschr. f. Nervenh.* **99:** 54, 1927.

Hansen, K., and von Ubisch, G.: Erbgang der Dystrophia musculorum progressiva, *ibid.* **105:** 276, 1928.

Weitz, W.: Ueber die Vererbung bei der Muskeldystrophie, *Deutsche Ztschr. f. Nervenh.* **73:** 143, 1921; Der Erbgang der Dystrophia musculorum progressiva, *ibid.* **102:** 209, 1928; Ein Schlusswort zur Frage des Erbgangs der *Dystrophia musculorum progressiva, ibid.* **107:** 316, 1929.

Barnes, S.: A Myopathic Family with Hypertrophic, Pseudohypertrophic, Atrophic and Terminal Stages, *Brain* **55:** 1 (March) 1932.

Brain, W. R.: Hereditary Nervous Disorders, in Blacker, C. P.: The Chances of Morbid Inheritance, Baltimore, William Wood & Company, 1934.

Milhorat, A. T., and Wolff, H. G.: Heredity of Progressive Dystrophy: Relationship Between Age at Onset of Symptoms and Clinical Course, *Arch. Neurol. & Psychiat.* **49:** 641-654 (May) 1943.

HISTAMINE FOR ARTHRITIS

***To the Editor:*—Please discuss the use of histamine in rheumatic conditions.** **M.D., Mississippi.**

ANSWER.—Deutsch was the first to use histamine by iontophoresis for the treatment of arthritis. Most reports in the literature refer to the use of histamine by this method. Definite relief of pain and improvement in motion of joints has been observed. Similar clinical results have been reported following the use of histamine ointment, Imadyl (marketed by Hoffmann-LaRoche). According to reports in the literature this product contains 1 per cent of histamine and information supplied by the manufacturer indicates that it is in the form of the dihydrochloride. Apparently the good results which have been observed are due to the vasodilating effects of the drug.

In man histamine dilates the arterioles, venules and capillaries, irrespective of the manner of administration. It can be given slowly in a 1:250,000 dilution by the drip method and is a safe procedure. It may be used to alleviate acute attacks of allergic

or pal
condit
give s
sary l
therap

t
pos
oper
1946)
syphili
2 per
There is
stances re
unless med
transition p

Failure of
premonitory s
the developme
Treponema pal
to penicillin th
syphilis when a
increasing titer
at times, of cours
to positive when i

Medical follow-u
syphilis should cons
inspection for skin an
mately a monthly basi
relapse is likely t oc
present knowledge,
the completion of t
which determine the
penicillin employed an
ment is commenced
lin therapy of ear yph
JOURNAL, Sept. 9, 1944, p.
clinical relapse combined was 3.
seropositive primary and 10 for
same study mentions 31 cases of
following penicillin therapy. Sm
ticularly prone to result in infec
shown in the experimental study
associates (Rapid Treatment of Ear
of Penicillin, *Arch. Dermat. & Syph.*
in the increasing number of reports
syphilis following the use of penicilli

ease, in particular gonorrhea (Atcheson, D. W.: Secondary Syphilis Following Penicillin Therapy of Gonorrhea, *Am. J. Syph., Gonor. & Ven. Dis.* **29:**423 [July] 1945. Walker, A. E., and Barton R. L.: The Treatment of Gonorrhea with Penicillin During the Incubation Period of Early Phase of Syphilis, *Ven. Dis. Inform.* **26:**241 [Nov.] 1945. Leifer, William, and Martin, S. P.: Penicillin in Early Syphilis, THE JOURNAL, Jan. 26, 1946, p. 202. Fromer, S.; Cutler, J. C., and Levitan, S.: Masking Early Syphilis by Penicillin Treatment of Gonorrhea, *Ven. Dis. Inform.* **27:**174 [July] 1946).

POSSIBLE MASCULINIZING TUMOR

To the Editor:—A woman aged 22, a primipara, sixteen months post partum developed a husky, gruff, somewhat hoarse, male type of voice, about the third or fourth month of pregnancy. Competent study of the nose and throat fails to reveal any underlying cause. Complete physical examination does not show any male type secondary sex characteristics or any other abnormality. Please discuss the diagnosis and treatment.
M.D., New York.

ANSWER.—The main problem in a patient like this is whether or not there is a masculinizing tumor in either the adrenal cortex or an ovary. A careful search should be made for other masculinizing changes, such as growth of hair on the face, chest, abdomen, arms and legs, enlargement of the clitoris, decrease in the size of the breasts and long periods of amenorrhea. An abdominal and pelvic examination should be carried out. Often a tumor can be felt on physical examination alone. If a tumor is not felt, a flat plate should be made of the genitourinary tract. If this is negative, an intravenous pyelogram might be of some value in demonstrating a tumor of the adrenal cortex. It would also be of some value to determine the amount of 17-ketosteroids in the urine. In masculinizing tumors the concentration is usually greatly increased, sometimes tenfold. If all findings are negative and the only change is in the voice, the patient may be followed closely without resorting to surgical intervention. If, however, a definite tumor is found or if there are chemical changes in the urine that point to one, both the ovaries and adrenals should be explored surgically.

MISSED ABORTION

To the Editor:—Please discuss the following case: A woman aged 44, married, of Norwegian birth, with an entirely negative menstrual and other past history, had her last period which was normal, Feb. 22-27, 1946. Without other signs of pregnancy, small amounts of bright blood from the uterus appeared on April 29 and continued daily for one week. The patient was then hospitalized. All laboratory findings were negative except a positive Aschheim-Zondek test. The lower part of the abdomen was filled with a firm tumor of regular outline, evidently the uterus, with the consistency of a fibroid rather than a pregnancy. The clinical impression was early pregnancy and intramural fibroid, with impending spontaneous abortion. With bed rest the patient's general condition has remained unchanged but the tumor has steadily decreased to less than one third of its former size and has become softer. A negligible amout of blood has been lost in the past three weeks. At times a small amount of brownish material has been noted, which on one occasion had an offensive odor. There has been no bleeding or discharge for the past five days. The tumor apparently is still regressing in size. Roentgenograms do not reveal fetal parts.
M.D., Massachusetts.

ANSWER.—This is almost certainly a case of missed abortion. Another Aschheim-Zondek test should be performed and will almost certainly be negative unless there is still some living chorionic ectoderm in the uterus. Regardless of the result of the biologic test, a curettement should be performed to remove the remains of the pregnancy. It is possible that nature has already expelled the entire ovum or will soon do so. Therefore one may wait to see if the uterus will stop diminishing in size and normal menstruation will return. If the menses do not return in two months and a new gestation has not begun, and certainly if bleeding is profuse or irregular, a curettage should be done. X-ray films will rarely reveal fetal parts before four months of development, so the absence of fetal parts has no significance in this case.

CLINICAL PATHOLOGY

To the Editor:—What is the definition of "clinical pathology?" How and where did the term originate? Please give references.
Kano Ikeda, M.D., St. Paul.

ANSWER.—The constitution and by-laws of the American Society of Clinical Pathologists defines clinical pathology as "that branch of the science and practice of medicine which consists of the application of pathologic anatomy, physiology, chemistry, parasitology and bacteriology to the diagnosis of disease."

This comprehensive definition, adopted in 1934, expresses a growth which began centuries ago with the examination of urine and which blossomed out in the first half of the nineteenth century in the application of microscopy and chemistry to clinical medicine and in the second half of the same century in the application of bacteriology and more recently in the application of immunology.

The exact origin of the term "clinical pathology" is difficult to establish. One finds it as early as 1865 in the name of The Clinico-Pathological Society of Washington, D. C. Its proceedings were published in the *Journal of Medical Sciences* **55:**120-128, 412-418, 1868. These are clinical case reports with occasional necropsy findings and urinalyses.

W. Essex Wynter and Frank J. Wethered are the authors of "A Manual of Clinical and Practical Pathology" published in 1890 by Blakiston. The introduction is of historical interest. It states as the object of the book "to embrace . . . a description of various methods which may be employed in the investigation of morbid changes both before and after death. For the most part chemistry, pathology and clinical medicine have hitherto been studied separately, whereas in many of their aspects they are so mutually involved that it is absolutely necessary to consider them together."

Clinical pathology appears as a subheading of pathology for the first time in 1905 in volume XII of the second series of the Index Catalogue of the Library of the Surgeon General's Office. There one finds on page 666 a series of papers published between 1904 and 1907.

LUPUS ERYTHEMATOSUS

To the Editor:—What is the latest treatment of lupus erythematosus? Allergy has been reported as a possible cause of lupus erythematosus. Is Benadryl of any value as reported by a "lay" publication?
E. J. Wintenburg, M.D., Van Nuys, Calif.

ANSWER.—There is no valid reason for the belief expressed recently by Teilum (*Acta med. Scandinav.* **123:**126, 1946) that disseminated lupus erythematosus is related to allergy. Unlike periarteritis nodosa, lupus erythematosus is not associated with a clinical history or manifestations of allergy such as urticaria, eczema, asthma or eosinophilia. It is true that the fibrinoid degeneration of connective tissue characteristic of advanced lupus erythematosus, which is responsible for the changes in the walls of small blood vessels and in serous membranes, is also seen in allergic diseases and can be reproduced in experimental animals by the injection of bacterial and other foreign proteins (Rich, A. R., and Gregory, J. E.: *Bull. Johns Hopkins Hosp.* **72:**65 [Feb.], **73:**239 [Oct.] 1943). But this connective tissue change is not specific for allergy, for it can be found in a variety of nonallergic conditions associated with connective tissue injury—around foreign bodies, in the base of a peptic ulcer, in diffuse scleroderma, in chronic infections.

Benadryl has been used in the treatment of lupus erythematosus but has not been found to be of value. There is as yet no specific therapy for the disease. The patient's nutrition should be improved by a well balanced diet, high in calories and reinforced with supplementary vitamins. Protection against bright light sometimes seems to be of value. Intercurrent infections should be promptly controlled with the appropriate antibiotic. In a few instances remissions have been associated with the administration of testosterone propionate or with castration, but the causal relationship is not convincing. This form of therapy has been based entirely on the fact that 95 per cent of the cases of disseminated lupus erythematosus occur in females.

DIET AND MEDICATION AFTER CHOLECYSTECTOMY

To the Editor:—Please discuss diet and medication following cholecystectomy.
M.D., New York.

ANSWER.—A special diet is not usually required by patients following a cholecystectomy. While the storage function of the gallbladder is lost, no disturbance in the absorption and digestion of fat or other foodstuffs results from this fact. For a time at least following the operation there occurs a more or less continuous flow of bile into the duodenum. In the normal person the bile secreted in the intervals between meals is stored in the gallbladder, where it undergoes concentration. Evacuation of the gallbladder occurs when food from the stomach enters the duodenum. Theoretically this should make for the better digestion and absorption of fat in the intestine. The factor of safety is so great, however, that no discoverable disturbance in digestion occurs when the flow of bile into the intestine is continuous rather than intermittent. As time goes on the common bile duct becomes dilated following cholecystectomy and an intermittent flow of bile into the intestine becomes partially reestablished.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

INHERITANCE OF PROGRESSIVE MUSCULAR DYSTROPHY

To the Editor:—A woman aged 29 has three adult brothers with progressive muscular dystrophy and has lost one brother with the same disease. There is no history of this condition in her ancestry. She is seeking advice as to whether she would be liable to transmit this condition if she were to marry and have children.

M.D., Ohio.

ANSWER.—The absence of progressive muscular dystrophy in the immediate ancestry is not unusual, and many cases of this type have been reported in the medical literature. When the observations extend back into the third or fourth generation prior to the appearance of the disease, other cases are frequently disclosed. The appearance of the disease in a single generation is presumptive evidence that progressive muscular dystrophy is propagated by a sex-linked recessive factor. Transmission is effected usually by the females, who do not have clinical signs of the disease, to the males. It would be of value to know the type of progressive muscular dystrophy exhibited in the three brothers of this patient, as there is some variation in the ability to transmit the disease depending on the presenting syndrome.

The means of heredity in progressive muscular dystrophy is not fully known. In the ordinary case, the sex chromosome carrying the dystrophy factor is transmitted by the females of the family for a number of generations. In other instances there may be multiple recessive factors in which the number of factors necessary to induce the condition are fewer for males than for females. Attempts to elucidate the inheritance of muscular dystrophy illustrates the difficulties involved in the application of genetic principles to human problems. The disease probably is inherited in a number of ways. In some families there is transmission by a mendelian dominant; in others by a recessive factor.

The query cannot therefore be answered in a categoric manner. Without more complete knowledge of the appearance of the disease in previous generations, the type of inheritance is not clear. What evidence is available points to the disease in the males only, with probable transmission through the females. The patient would probably have affected male children and nonaffected female children, the females acting as carriers for succeeding generations.

References:

Diehl, F.; Hansen, K., and von Ubisch, G.: Der Erbgang der Dystrophia musculorum progressiva, *Deutsche Ztschr. f. Nervenh.* **99:** 54, 1927.

Hansen, K., and von Ubisch, G.: Erbgang der Dystrophia musculorum progressiva, *ibid.* **105:** 276, 1928.

Weitz, W.: Ueber die Vererbung bei der Muskeldystrophie, *Deutsche Ztschr. f. Nervenh.* **73:** 143, 1921; Der Erbgang der Dystrophia musculorum progressiva, *ibid.* **102:** 209, 1928; Ein Schlusswort zur Frage des Erbgangs der Dystrophia musculorum progressiva, *ibid.* **107:** *316, 1929.*

Barnes, S.: A Myopathic Family with Hypertrophic, Pseudohypertrophic, Atrophic and Terminal Stages, *Brain* **55:** 1 (March) 1932.

Brain, W. R.: Hereditary Nervous Disorders, in Blacker, C. P.: The Chances of Morbid Inheritance, Baltimore, William Wood & Company, 1934.

Milhorat, A. T., and Wolff, H. G.: Heredity of Progressive Dystrophy: Relationship Between Age at Onset of Symptoms and Clinical Course, *Arch. Neurol. & Psychiat.* **49:** 641-654 (May) 1943.

HISTAMINE FOR ARTHRITIS

To the Editor:—Please discuss the use of histamine in rheumatic conditions.

M.D., Mississippi.

ANSWER.—Deutsch was the first to use histamine by iontophoresis for the treatment of arthritis. Most reports in the literature refer to the use of histamine by this method. Definite relief of pain and improvement in motion of joints has been observed. Similar clinical results have been reported following the use of histamine ointment, Imadyl (marketed by Hoffmann-LaRoche). According to reports in the literature this product contains 1 per cent of histamine and information supplied by the manufacturer indicates that it is in the form of the dihydrochloride. Apparently the good results which have been observed are due to the vasodilating effects of the drug.

In man histamine dilates the arterioles, venules and capillaries, irrespective of the manner of administration. It can be given slowly in a 1:250,000 dilution by the drip method and is a safe procedure. It may be used to alleviate acute attacks of allergic or palindromic arthritis. Its value in the treatment of rheumatic conditions is not definitely established, although it does seem to give symptomatic relief in many subjects. More work is necessary before definite conclusions can be drawn regarding its therapeutic value.

References:

Deutsch, Dezso.: Histamin zur therapie rheumatischer erkrankungen, *Med. Klin.* **27:** 1491 (Oct.) 1931.

Histamine in the Treatment of Arthritis, editorial, Canad. M. A. J. **31:** 662, 1934.

Kling, D. H.: A Histamine Ointment for Cataphoresis and Inunction in Rheumatic Affections and Diseases of the Peripheral Circulation, *M. Rec.* **150:** *291* (Oct. 18) 1939.

Kling, D. H.: Histamine Cataphoresis, *M. Rec.* **152:** 388 (Dec. 4) 1940.

Kling, D. H., and Sashin, D.: Histaminic Iontophoresis in Rheumatic Conditions and Deficiencies of Peripheral Circulaton, *Arch. Phys. Therapy* **18:** 333 (June) 1937.

Meiether, R. O.: Histamine in Rheumatoid Arthritis, *Ann. Int. Med.* **13:** 2147 (May) 1940.

Reiley, R. E., and Knapp, M. E.: Symptomatic Relief in Chronic and Acute Arthritides by Histamine Iontophoresis, *Arch. Phys. Therapy* **22:** 288 (May) 1941.

Young, A. G.: Value of Histamine by Inunction in Chronic Arthritis, *M. Rec.* **146:** *315 (Oct. 6) 1937.*

INFECTIOUS RELAPSE AFTER PENICILLIN TREATMENT OF RECENTLY ACQUIRED SYPHILIS

To the Editor:—A man received antisyphilitic treatment with penicillin while in the army in May 1945. In March 1946 he transmitted the disease to his wife. He denies the possibility of reinfection. Have cases of infectious relapse been reported after penicillin treatment of recently acquired syphilis?

F. C. Katzenstein, M.D., Salem, Ill.

ANSWER.—Infectious relapse is a finding of all investigators studying the penicillin therapy of syphilis when the drug employed in the treatment of a recently acquired infection is insufficient to arrest the disease. Using total dosages of 1.2 million Oxford units of sodium penicillin, the amount of drug employed in most published material to date, the incidence of infectious relapse reported by various authors is from 1 to 5 per cent. Actually more recent experience has indicated that it is probably considerably in excess of these figures.

The first detectable relapsing lesion will usually occur from four to six months after therapy has been completed, though lesions are known to have resulted within the first month and after more than one year. Whenever treatment fails to cure freshly acquired syphilis, infectious relapse and transmission of the disease under favorable circumstances are accordingly a possibility. Pillsbury's report from the European theater of operation (*Am. J. Syph., Gonor. & Ven. Dis.* **30:**134 [March] 1946) indicates that soldiers treated there with penicillin for syphilis yielded a known incidence of infectious relapse of 1 to 2 per cent, and statistical data are given on 72 such cases. There is a distinct possibility that soldiers under such circumstances returning to civilian life will infect their marital partner unless medical supervision continues to be adequate during the transition period from military to civilian life.

Failure of serologic response or serologic relapse is often a premonitory sign of impending infectious relapse and warns of the development of clinically demonstrable lesions containing Treponema pallidum. Thus, most patients who fail to respond to penicillin therapy will maintain a high serologic titer for syphilis when a quantitative test is employed or will show an increasing titer following the initial reduction. The test will at times, of course, become completely negative only to revert to positive when infectious lesions develop, or shortly before.

Medical follow-up of all penicillin treated cases of early syphilis should consist of a blood serologic test and physical inspection for skin and mucous membrane lesions on approximately a monthly basis for at least the period during which relapse is likely to occur. That would be, according to our present knowledge, for a minimum of ten to twelve months after the completion of therapy. Among the most important facts which determine the possibility of relapse are total dosage of penicillin employed and the duration of the disease when treatment is commenced. Thus in the initial publications of penicillin therapy of early syphilis (J. E. Moore and others, THE JOURNAL, Sept. 9, 1944, p. 67) the percentage of serologic and clinical relapse combined was 3.2 for seronegative primary, 5 for seropositive primary and 10 for early secondary syphilis. This same study mentions 31 cases of clinical relapse in early syphilis following penicillin therapy. Small dosage of penicillin is particularly prone to result in infectious relapsing syphilis, as is shown in the experimental study by G. W. Binkley and his associates (Rapid Treatment of Early Syphilis with Small Doses of Penicillin, *Arch. Dermat. & Syph.* **51:**200 [March] 1945) and in the increasing number of reports of development of infectious syphilis following the use of penicillin to treat some other disease, in particular gonorrhea (Atcheson, D. W.: Secondary Syphilis Following Penicillin Therapy of Gonorrhea, *Am. J. Syph., Gonor. & Ven. Dis.* **29**:423 [July] 1945. Walker, A. E., and Barton R. L.: The Treatment of Gonorrhea with Penicillin During the Incubation Period of Early Phase of Syphilis, *Ven. Dis. Inform.* **26**:241 [Nov.] 1945. Leifer, William, and Martin, S. P.: Penicillin in Early Syphilis, The Journal, Jan. 26, 1946, p. 202. Fromer, S.; Cutler, J. C., and Levitan, S.: Masking Early Syphilis by *Penicillin Treatment of Gonorrhea, Ven. Dis. Inform.* **27**:174 [July] 1946).

POSSIBLE MASCULINIZING TUMOR

To the Editor:—A woman aged 22, a primipara, sixteen months post partum developed a husky, gruff, somewhat hoarse, male type of voice, about the third or fourth month of pregnancy. Competent study of the nose and throat fails to reveal any underlying cause. Complete physical examination does not show any male type secondary sex characteristics or any other abnormality. Please discuss the diagnosis and treatment.

M.D., New York.

Answer.—The main problem in a patient like this is whether or not there is a masculinizing tumor in either the adrenal cortex or an ovary. A careful search should be made for other masculinizing changes, such as growth of hair on the face, chest, abdomen, arms and legs, enlargement of the clitoris, decrease in the size of the breasts and long periods of amenorrhea. An abdominal and pelvic examination should be carried out. Often a tumor can be felt on physical examination alone. If a tumor is not felt, a flat plate should be made of the genitourinary tract. If this is negative, an intravenous pyelogram might be of some value in demonstrating a tumor of the adrenal cortex. It would also be of some value to determine the amount of 17-ketosteroids in the urine. In masculinizing tumors the concentration is usually greatly increased, sometimes tenfold. If all findings are negative and the only change is in the voice, the patient may be followed closely without resorting to surgical intervention. If, however, a definite tumor is found or if there are chemical changes in the urine that point to one, both the ovaries and adrenals should be explored surgically.

MISSED ABORTION

To the Editor:—Please discuss the following case: A woman aged 44, married, of Norwegian birth, with an entirely negative menstrual and other past history, had her last period which was normal, Feb. 22-27, 1946. Without other signs of pregnancy, small amounts of bright blood from the uterus appeared on April 29 and continued daily for one week. The patient was then hospitalized. All laboratory findings were negative except a positive Aschheim-Zondek test. The lower part of the abdomen was filled with a firm tumor of regular outline, evidently the uterus, with the consistency of a fibroid rather than a pregnancy. The clinical impression was early pregnancy and intramural fibroid, with impending spontaneous abortion. With bed rest the patient's general condition has remained unchanged but the tumor has steadily decreased to less than one third of its former size and has become softer. A negligible amout of blood has been lost in the past three weeks. At times a small amount of brownish material has been noted, which on one occasion had an offensive odor. There has been no bleeding or discharge for the past five days. The tumor apparently is still regressing in size. Roentgenograms do not reveal fetal parts.

M.D., Massachusetts.

Answer.—This is almost certainly a case of missed abortion. Another Aschheim-Zondek test should be performed and will almost certainly be negative unless there is still some living chorionic ectoderm in the uterus. Regardless of the result of the biologic test, a curettement should be performed to remove the remains of the pregnancy. It is possible that nature has already expelled the entire ovum or will soon do so. Therefore one may wait to see if the uterus will stop diminishing in size and normal menstruation will return. If the menses do not return in two months and a new gestation has not begun, and certainly if bleeding is profuse or irregular, a curettage should be done. X-ray films will rarely reveal fetal parts before four months of development, so the absence of fetal parts has no significance in this case.

CLINICAL PATHOLOGY

To the Editor:—What is the definition of "clinical pathology?" How and where did the term originate? Please give references.

Kano Ikeda, M.D., St. Paul.

Answer.—The constitution and by-laws of the American Society of Clinical Pathologists defines clinical pathology as "that branch of the science and practice of medicine which consists of the application of pathologic anatomy, physiology, chemistry, parasitology and bacteriology to the diagnosis of disease."

This comprehensive definition, adopted in 1934, expresses a growth which began centuries ago with the examination of urine and which blossomed out in the first half of the nineteenth century in the application of microscopy and chemistry to clinical medicine and in the second half of the same century in the application of bacteriology and more recently in the application of immunology.

The exact origin of the term "clinical pathology" is difficult to establish. One finds it as early as 1865 in the name of The Clinico-Pathological Society of Washington, D. C. Its proceedings were published in the *Journal of Medical Sciences* **55**: 120-128, 412-418, 1868. These are clinical case reports with occasional necropsy findings and urinalyses.

W. Essex Wynter and Frank J. Wethered are the authors of "A Manual of Clinical and Practical Pathology" published in 1890 by Blakiston. The introduction is of historical interest. It states as the object of the book "to embrace . . . a description of various methods which may be employed in the investigation of morbid changes both before and after death. For the most part chemistry, pathology and clinical medicine have hitherto been studied separately, whereas in many of their aspects they are so mutually involved that it is absolutely necessary to consider them together."

Clinical pathology appears as a subheading of pathology for the first time in 1905 in volume XII of the second series of the Index Catalogue of the Library of the Surgeon General's Office. There one finds on page 666 a series of papers published between 1904 and 1907.

LUPUS ERYTHEMATOSUS

To the Editor:—What is the latest treatment of lupus erythematosus? Allergy has been reported as a possible cause of lupus erythematosus. Is Benadryl of any value as reported by a "lay" publication?

E. J. Wintenburg, M.D., Van Nuys, Calif.

Answer.—There is no valid reason for the belief expressed recently by Teilum (*Acta med. Scandinav.* **123**:126, 1946) that disseminated lupus erythematosus is related to allergy. Unlike periarteritis nodosa, lupus erythematosus is not associated with a clinical history or manifestations of allergy such as urticaria, eczema, asthma or eosinophilia. It is true that the fibrinoid degeneration of connective tissue characteristic of advanced lupus erythematosus, which is responsible for the changes in the walls of small blood vessels and in serous membranes, is also seen in allergic diseases and can be reproduced in experimental animals by the injection of bacterial and other foreign proteins (Rich, A. R., and Gregory, J. E.: *Bull. Johns Hopkins Hosp.* **72**:65 [Feb.], **73**:239 [Oct.] 1943). But this connective tissue change is not specific for allergy, for it can be found in a variety of nonallergic conditions associated with connective tissue injury—around foreign bodies, in the base of a peptic ulcer, in diffuse scleroderma, in chronic infections.

Benadryl has been used in the treatment of lupus erythematosus but has not been found to be of value. There is as yet no specific therapy for the disease. The patient's nutrition should be improved by a well balanced diet, high in calories and reinforced with supplementary vitamins. Protection against bright light sometimes seems to be of value. Intercurrent infections should be promptly controlled with the appropriate antibiotic. In a few instances remissions have been associated with the administration of testosterone propionate or with castration, but the causal relationship is not convincing. This form of therapy has been based entirely on the fact that 95 per cent of the cases of disseminated lupus erythematosus occur in females.

DIET AND MEDICATION AFTER CHOLECYSTECTOMY

To the Editor:—Please discuss diet and medication following cholecystectomy.

M.D., New York.

Answer.—A special diet is not usually required by patients following a cholecystectomy. While the storage function of the gallbladder is lost, no disturbance in the absorption and digestion of fat or other foodstuffs results from this fact. For a time at least following the operation there occurs a more or less continuous flow of bile into the duodenum. In the normal person the bile secreted in the intervals between meals is stored in the gallbladder, where it undergoes concentration. Evacuation of the gallbladder occurs when food from the stomach enters the duodenum. Theoretically this should make for the better digestion and absorption of fat in the intestine. The factor of safety is so great, however, that no discoverable disturbance in digestion occurs when the flow of bile into the intestine is continuous rather than intermittent. As time goes on the common bile duct becomes dilated following cholecystectomy and an intermittent flow of bile into the intestine becomes partially reestablished.

USE OF FLUIDS IN CRANIOCEREBRAL INJURIES

To the Editor —Since the surplus army and navy dried plasma became freely available for civilian medical practice in abundant supply, I have noted many instances in which this plasma is being used for patients with fractured skulls without outward signs of shock and not being prepared for any immediate operative procedure Apparently the rationale of this therapy is to prevent shock and to maintain the osmotic pressure of the blood and possibly reduce intracranial pressure The plasma is being given in fairly large amounts, varying from 250 to 1,000 cc, reconstituted to its original volume The question arises as to whether the use of these large amounts of isotonic plasma may not be more harmful than beneficial, because of the possibility of the increased blood volume causing an increase in intracanial pressure. I would appreciate a discussion of the use of intravenous fluids in the presence of a fractured skull, with particular emphasis on the use of hypertonic preparations such as concentrated albumin, glucose or magnesium sulfate preparations

M D, New York

Answer —There are few subjects in medicine that have been characterized by as much loose thinking, talking, writing and practice as has the use of fluids in cases of craniocerebral injury In this connection there are certain facts which must not be lost sight of First and foremost, the victims of craniocerebral injuries are as much in need of fluids and a proper fluid, electrolyte and protein balance as is any other type of patient Second, it is impossible to dehydrate the brain without at the same time dehydrating the patient as a whole Third, cerebral edema plays *only a relatively small role in the picture of craniocerebral injury* Dehydration and the use of hypertonic solutions of any kind have little place in the treatment of such injuries Without doubt the use of such solutions and dehydration has resulted in far more damage than they have good Certainly one can produce shrinkage of the brain by the use of hypertonic solutions intravenously, but, unless a serious state of dehydration is maintained thereafter, the shrinkage of the brain will not persist The use of hypertonic solutions in cases of craniocerebral injury should be limited to those relatively few instances in which it becomes necessary to reduce intracranial tension temporarily while preparing to provide more permanent relief surgically

It is now generally recognized that the only adequate treatment for shock is whole blood given intravenously promptly and in sufficiently large quantities to supply the patient's needs whatever they may be Plasma and serum are not satisfactory substitutes for whole blood Their use in such circumstances is excusable only until whole blood can be secured. On the other hand, plasma may be preferable when one seeks to repair a protein deficiency This would rarely be desirable for a patient with a recent craniocerebral injury The use of 250 to 1,000 cc of fluid, be it plasma or other isotonic fluid, would rarely be harmful to a patient with such an injury In fact it frequently would be desirable as a means of insuring that the patient had adequate fluids However, as noted previously, there would only rarely be instances in which plasma would be the fluid of choice

---

PAINFUL UTERINE CONTRACTIONS DURING PREGNANCY

To the Editor —A secundipara, tertigravida, complains of contractions of the uterus which are not painful but have been troublesome during the last four and one-half months of the pregnancy When they occur they temporarily incapacitate her and they become more frequent and severe as the pregnancy progresses The first labor was associated at its onset with spontaneous rupture of the membranes just before term but was otherwise normal During the second pregnancy contractions began at four and one half months, and various antispasmodics and sedatives were used, with negligible results Labor was one month premature, with spontaneous rupture of the membranes four days prior to delivery. The contractions during the last two months of that second pregnancy were so severe as to incapacitate her for even the lightest tasks. Is this condition physiologic? Should continued sedation be used or is there any specific preparation for the condition? Louis H. Bos, M D, Chicago

POSSIBLE TOXICITY OF PHENYL-MERCURIC BORATE USED AS PRESERVATIVE FOR PLASMA

To the Editor —What is the toxicity of phenyl-mercuric borate used as a preservative for dried plasma? Is there any danger if plasma containing it is administered in large quantities (5 to 10 units of 250 cc. each within a period of twenty-four to forty-eight hours) to patients with such illnesses as burns covering a large surface of the body area? This plasma contains sufficient phenyl-mercuric borate to constitute a 1:50,000 dilution when the plasma is restored for use

M D, New York

Answer —Phenyl-mercuric borate combines with plasma proteins so that its toxicity is changed and probably lowered When a patient receives large doses of plasma containing a 1:50,000 dilution of phenyl-mercuric borate, for instance 10 units of 250 cc each, he receives 50 mg. of phenyl-mercuric borate With such an amount, especially in the case of burns with already damaged kidneys, the possibility of toxic action cannot be overlooked

It is not necessary to add preservatives to plasma to preserve in the dried or frozen state. With ordinary precautions the stability can be safely maintained without the addition of preservatives. When large doses of plasma are used (over 2,000 cc in twenty-four hours), preference should be given to plasma containing no preservatives For smaller doses such precaution *is not needed*

PREMENSTRUAL BLEEDING

To the Editor.—A common complaint in my practice is a brownish vaginal discharge for from three to nine days prior to the onset of the menses Most of the patients are young, healthy and apparently normal women Please discuss this problem and the treatment indicated

M D, Michigan

Answer —The brown discharge is mild premenstrual bleeding and is not uncommon It is usually due to the hyperemia which is present in all the pelvic organs, but in most instances an abnormality of the cervix will be found such as so-called erosions or polyps Hence in all cases of premenstrual brown or bloody discharge a complete pelvic examination should be made, including the use of a vaginal speculum Removal of cervical polyps and cauterization of erosions will cure most of the cases

---

TREATMENT OF CEREBRAL HEMORRHAGE

To the Editor —Prior to my entering the service I had a patient who developed a paralysis of the vocal cords and the entire right side of his body after a cerebral hemorrhage On my return he is still unable to talk but can use his leg and arm to some extent. His son, who is still in the service, feels that something can be done for his father in the way of brain surgery. Is there any one in this country who could relieve this man by surgery?

M D, Iowa

Answer —It would be impossible to give a satisfactory answer to this query without having available a detailed history of the development and course of the patient's disability and the results of a careful neurologic and general physical examination, plus such laboratory data as might then appear indicated If the original diagnosis of "cerebral hemorrhage" is correct, or if the patient suffers some other type of cerebrovascular disorder such as a cerebral thrombosis, there is nothing that neurologic surgery would have to offer. There are numerous competent neurologic surgeons throughout the United States to whom this patient could be referred for an examination and an opinion as to the possibilities of surgical treatment. Those who have been certified are so indicated in the American Medical Directory or are listed in the Directory of Medical Specialists

The Journal of the
American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 133, No. 4 CHICAGO, ILLINOIS JANUARY 25, 1947

Copyright, 1947, by American Medical Association

CHEMOTHERAPY IN THE MANAGEMENT OF WOUNDS

CHAMP LYONS, M D.
New Orleans

It is important to emphasize the limited role of chemotherapy in the management of wounds.[1] The basic tenet of the current philosophy in this regard is sound surgical care.[2] Blood transfusion and chemotherapy are important features of a supportive program designed to expedite the surgical treatment of the wounded. Of all the measures devised to prevent infection, only active immunization with tetanus toxoid may be said to have achieved its purpose completely. The only other prophylactic procedure of comparable value is initial surgical management of the wound. The greatest usefulness of antibacterial drugs has been in the therapy of impending or established infection complicating the surgical management of the wound.

One of the more important recent advances in the management of wounds is a renewed appreciation of the clinical distinction between invasive infection and localized suppuration of the wound.[3] With the help of the bacteriologist it has been established that invasive infection demands the presence of hemolytic streptococci, staphylococci or toxigenic clostridiums. However, the presence of such potentially invasive pathogens cannot be correlated constantly or even frequently with clinical signs of invasive infection. The predominant clinical pattern of infection may be suppuration of the wound even when bacteriologic cultures demonstrate the presence of potentially invasive bacteria. Suppuration of a wound may also occur in the absence of invasive pathogens. In such instances, the predominant bacteria are proteolytic against substrates of animal protein and have been classified as wound pathogens.[4] The clinical pattern of invasive infection indicates the presence of true pathogens, but suppuration of a wound may be due to true pathogens, wound pathogens or a combination of the two groups.

The combined experience of World Wars I and II has shown that the cleanly excised wound of soft parts develops invasive infection due solely to hemolytic streptococci[5] Incompletely excised wounds of soft parts and wounds complicated by fracture are vulnerable to invasive infection by any of the true pathogens. On the basis of the frequently demonstrated hazard of contamination it seems fair to conclude that the character of the wound is more important than the presence of the bacteria The distinguishing feature of wounds vulnerable to staphylococcic and clostridial infection is the presence of devitalized tissue or blood clot The presence of a pabulum of wound protein nutritionally acceptable to the bacteria becomes an important contributing factor in invasive infections of wounds due to staphylococci or toxigenic clostridiums.

This "pabulum theory" is of even greater importance in the causation of suppuration of the wound.[6] By definition, the virulence of wound pathogens is restricted to the proteolysis of devitalized tissue protein. The prompt control of infection due to Pseudomonas aeruginosa through the arrest of exudation by the secondary suture or skin grafting of a surface wound[7] would seem adequate refutation of the "germ theory" of suppuration of the wound

Experience with the management of chronically infected wounds has shown that the persistence of devi-

---

From the Department of Surgery, Tulane University School of Medicine and the Section on General Surgery, Ochsner Clinic

Read in the symposium on "Wound Management" before the Section on Surgery, General and Abdominal, at the Ninety Fifth Annual Session of the American Medical Association, San Francisco, July 5, 1946

[1] (*a*) MacFarlane, J A Wounds in Modern War, J Bone & Joint Surg **24:** 739-752 (Oct) 1942 (*b*) Lyons, C Penicillin Therapy of Surgical Infections in the U S Army, J. A M A **123:** 1007 1018 (Dec 18) 1943 (*c*) Rankin, F W Current Trends in Military Surgery, Kentucky M J **42:** 11 15 (Jan) 1944 Rankin, F. W , and others War Wounds and Burns, Clinics **2:** 1194 1218 (Feb) 1944 Kirk, N T , and McKeever, F M The Guillotine Amputation, J A M A **124:** 1027-1030 (April 8) 1944 (*d*) Meleney, F L , and Whipple, A. O A Statistical Analysis of a Study of the Prevention of Infection in Soft Part Wounds, Compound Fractures and Burns with Special Reference to the Sulfonamides, Surg , Gynec & Obst **80:** 263 296 (March) 1945

[2] (*a*) Churchill, E D Surgical Management of the Wounded in the Mediterranean Theater at the Time of the Fall of Rome, Ann Surg **120:** 268 283 (Sept)1944 (*b*) Lyons, C · The Philosophy of Wound Management in the United States Army, Bull Am Coll Surgeons **30:** 13 14 (*Feb*) 1945 (*c*) DeBakey, M , and Carter, B N Current Considerations of War Surgery, Ann Surg **121:** 545 563 (May) 1945 (*d*) Cutler, E C Military Surgery · United States Army; European Theater of Operations, 1944 1945, Surg , Gynec & Obst **82:** 261 274 (March) 1946

[3] (*a*) Lockwood J S · Definition of Objectives and the Importance of Controls in Evaluating the Local Use of Sulfonamides in Wounds, Surg , Gynec & Obst **79:** 1 9 (July) 1944 Harvey, S C · Treatment of Infection with Particular Reference to Peritoneum, New York State J. Med **44:** 1883 1886 (Sept 1) 1944 Churchill, E D , cited by Whipple, A O , in foreword to Meleney and Whipple[1d] (*b*) Lyons, C Role of Chemotherapy in Wound Management in the Mediterranean Theater, Ann Surg , to be published (*c*) Rustigian, R · Bacteriology of War Wounds, to be published (*d*) DeBakey and Carter[2c]

[4] MacLennan, J D Anaerobic Infections of War Wounds in the Middle East, Lancet **2:** 63 (July 17), 94 (July 24), 123 (July 31) 1943 Lyons, C , and Rustigian, R Chemotherapy and the Reparative Management of Battle Wounds Report to the Surgeon General, October 1944 Smith, L DeS , and George, R L The Anaerobic Bacterial Flora of Clostridial Myositis, J Bact **51:** *271 279* (March) 1946

[5] Pool, E H War Wounds Primary and Secondary Suture, J A M A **73:** 383 388 (Aug 9) *1919* *Beebe*, T C Wound Bacteriology at Evacuation Hospital No 1, American E F , France, War Med **2:** 1023 1036 (Jan 19) 1919 Bentley, F H , and Thomson S Control of Infection in Recent Wounds by Surgery and Local Chemotherapy, Brit M J. **1:** 471 474 (April 7) *1945* Lyons, C The Use of Chemotherapy in the Secondary Closure of War Wounds of Soft Parts, Surgery **19:** *275 276* (Feb) *1946* Ackman, D , and Smith, F The Role of Chemotherapy in Wounds and Surgical Infections, Ann Surg **123:** 70 95 (Jan) 1946 Churchill[2a]

[6] Lister, J Relation of Microorganisms to Inflammation, Lancet **2:** 695 698 (Oct 22) 1881, An Address on the Treatment of Wounds, ibid **2:** *863 866* (Nov 19), 901 903 (Nov 26) 1881, On a New Method of Treating Compound Fracture, Abscess, etc , with Observations on the Conditions of Suppuration, ibid **1:** *326 329* (March 16), 357 359 (March 23), 387 389 (March 30), 507 509 (April 27) 1867, **2:** *95 96* (*July 27*) *1867*

[7]. Kirtley, J A , Jr , and Trabue, C C , IV · Report on Delayed Primary Closure of Wounds, M Bull North African Theat Op **1:** 10 11 (June) 1944 Wilson, H , and Threadgill, F D Secondary Suture of War Wounds, Bull U S Army M Dept , *November 1944*, no 82, pp *77 80* Rawles, B W , Jr Repair of Soft Tissue War Wounds, Ann Surg **123:** 209 220 (Feb) 1946 Bornemeier, W C , and Parsons, L The Treatment of Burns Report of One Hundred and Fifty Five Cases, Surg , Gynec & Obst **82:** *311 318* (March) *1946* Lawrence, K B , and Sturgis, S H Secondary Suture of War Wounds A Study of Methods and Results in an Overseas General Hospital, ibid **82:** 543 548 (May) *1946*

talized tissue or sequestrums prevents chemotherapeutic sterilization of the wound.[8] All except the most sensitive organisms are resistant even to high local concentrations of antibacterial agents in suppurative wounds. The local trauma incident to topical therapy increases the exudate from the wound and favors the growth of wound pathogens resistant to the agent employed.[9]

Rustigian has demonstrated that among the wound pathogens there are many organisms naturally resistant to antibacterial agents.[10] The most important of these is the ubiquitous Clostridium sporogenes which is resistant to sulfonamide compounds, penicillin and streptomycin. The important aerobic gram-negative wound pathogens are resistant to sulfonamide compounds in exudates from the wound, are insensitive to penicillin and inherit or readily acquire a resistance to streptomycin. Clinical experience with established infection has shown that the sulfonamide compounds are extremely effective against hemolytic streptococci, have a limited usefulness against staphylococcic infections and are relatively ineffective against gas gangrene. Streptomycin is ineffective against the clostridiums. With the exception of individually resistant strains, penicillin is effective against all the potentially invasive pathogens.

Sulfonamide therapy has been shown to be adequate for the wound endangered only by hemolytic streptococci. Penicillin is the drug of choice for all other wounds subject to invasive infection. No virtue is attached to combinations of penicillin and a sulfonamide compound in the treatment of infected wounds,[11] probably because of the presence of a sulfonamide inhibitor in exudates from wounds. This is contrary to experience in the management of infections of the urine, bile and spinal fluid wherein the antagonist of the drug is diluted or absent.

The only immediately effective treatment for suppuration of a wound is precise surgical toilet of the wound. Chemical and bacterial methods of débridement are more slowly and less certainly effective. After surgical removal of the obvious pabulum of wound protein, further bleeding and serous effusion should be prevented by the use of splints, pressure dressings and delayed or primary closure of the wound.

COMMENT

There is now considerable agreement that the major usefulness of chemotherapy is for the treatment of impending or established invasive infection during the initial, reparative and reconstructive phases of the surgical management of a wound. This is most certainly and expeditiously accomplished by the systemic administration of the selected drug.

Suppuration of a wound is believed to be due more to the presence of a pabulum of wound protein than to any specific bacterial virulence. No available antibacterial agent can completely sterilize an open wound. Topical, or local, chemotherapy has been discarded as ineffective and deleterious.[12] Suppuration of a wound is an indication for repeated surgical toilet of the wound.

Closure, not sterilization, of the wound is the practical objective of the early phases of management. Efforts to abolish infection are necessarily integrated with efforts to expedite the healing of the wound. The most important accessory procedures in this regard are the correction of anemia and the restoration of tissue protein deficits. The known depressant effects of sulfonamide compounds on hematopoiesis, the intestinal synthesis of essential metabolites and the appetite in general are further reasons to establish penicillin as the chemotherapeutic agent of choice in the management of wounds.

CONCLUSIONS

1. The prophylaxis of infected wounds is accomplished by active immunization with tetanus toxoid and initial surgical management.
2. Chemotherapy by the systemic route is indicated for the treatment of impending or established invasive infection complicating the surgical management of the wound.
3. Suppuration of the wound is an indication for surgical procedure.
4. Local chemotherapy is unnecessary and undesirable.
5. Penicillin by the systemic route is the chemotherapeutic agent of choice to supplement an aggressive surgical program of the management of wounds.

WOUND SHOCK

DR. JOHN D. STEWART
Buffalo

The clinical picture which is characteristic of traumatic shock may result from a variety of causes acting singly or in combination. Propulsive failure or cardiac deficiency, such as is seen in coronary thrombosis or severe arrythmias; mechanical interference with venous return and cardiac filling, as in strangulation of intestinal loops, cardiac tamponade or pulmonary embolism; dilatation of the vascular bed, as in peritonitis or overwhelming invasive infections, and oligemia due to dehydration, hemorrhage or burns, all are conditions which, though different in their nature and treatment, nevertheless may be responsible for reduction in cardiac output, hypotension and tissue anoxia. If the primary cause goes unrelieved the state of shock tends to progress to a point of irreversibility in which treatment will not save life. In any case of shock, therefore, it is of urgent importance to identify and treat the primary cause as well as the resultant physiologic disturbances.

In a theoretic analysis of the causes of shock in battle casualties one has to consider such varied factors as hemorrhage, sepsis, dehydration, burns and loss of plasma, absorption of toxins from damaged tissues, contamination of body cavities and serous effusions, sectioning of the cord or major neural trunks, pulmonary fat embolism, pulmonary thromboembolism, pulmonary blast injury and pulmonary edema and direct interference with cardiac output by mediastinal trauma. Furthermore, pain, emotional tension, exposure to cold and dampness and malnutrition may constitute active contributory influences. Any of these circumstances may be important determinants in the shock seen in the forward battle zones. However, there is considerable evidence to indicate that loss of blood dominates the early picture in the majority of severe wounds inflicted by penetrating high explosive missiles. This evidence is significant not only in the proper management of battle casualties but in relation to the mechanism of traumatic shock and its treatment in civilian surgical practice.

---

[8] Ferrer, J. M., Jr.: Role of Penicillin in the Management of Infection, J. Bone & Joint Surg. **26**: 522-531 (July) 1944. Hampton, O. P., Jr.: Reparative Surgery of Compound Battle Fractures in the Mediterranean Theater of Operations, Ann. Surg. **122**: 289-332 (Sept.) 1945. Lyons.[1b]

[9] McKissock, W.; Logue, V., and Bartholomew, I.: The Need for Asepsis in Local Penicillin Therapy, Brit. M. J. **2**: 551-555 (Oct. 28) 1944. Lyons.[1b] Footnote 7.

[10] United States War Department, Technical Bulletin (TB Med 172), Treatment of Infectious Diseases with Sulfonamide Drugs, Washington, D. C., Government Printing Office, 1945. Streptomycin: A Review of Current Experience, Surgical Consultants Division, Surgeon General's Office, Bull. U. S. Army M. Dept. **5**: 531-537 (May) 1946. Lyons.[3b] Rustigian.[3c]

[11] Porrit, A. E.: Penicillin Therapy and Control in Twenty-One Army Groups, Printing & Stationery Service, British Army of the Rhine, May 1945. Churchill.[2a] Cutler.[2d] Lyons.[3b]

[12] Circular Letter Orders 160, United States War Department, Washington, D. C., Government Printing Office, June 1, 1945, par. 5.

"Sulfonamide Therapy.—1. The general policies regarding the local use of chemotherapeutic agents have been enunciated in paragraph 21, WD Technical Bulletin Medical 147 (TB Med 147), March 1945. . . . Experience in wound management justifies the abandonment of local use of any chemical agent in a wound for its supposed antiseptic effect in the prevention or treatment of infection.

"2. The practice of routine local application of crystalline sulfonamides to wounds as an emergency aid measure and prior to initial wound surgery will be discontinued. The local application of this agent to wounds not involving serous cavities following wound surgery will also be discontinued and its local use in wounds involving serous cavities is not recommended."

Read in the symposium on "Wound Management" before the Section on Surgery, General and Abdominal, at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 5, 1946.

TABLE 1.—*Blood Volume Data on Severely Wounded Soldiers*

Restorative therapy and surgical intervention have taken place between initial determinations of blood volume and secondary determinations twenty-four hours later.

	Therapy Before Study		Initial Blood Volume, Percentage of Normal	Therapy First 24 Hrs.		Blood Volume, Percentage of Normal
	Plasma, Cc.	Blood, Cc.		Plasma, Cc.	Blood, Cc.	
Average........	490	120	79.9	950	1,310	94.9
High............	1,250	2,500	123.0	3,000	4,000	135.2
Low............	0	0	28.1	0	0	59.8
Number of observations...	76	76	75	67	67	47

A group of gravely wounded, nontransportable casualties were examined in forward field hospitals a few miles behind the battle line. All were in actual or imminent shock on admission. Compound fractures, traumatic amputations and penetrating abdominal and thoracic wounds predominated in the 100 cases studied. In the majority of cases the wounds were multiple. The average interval between wounding and admission to the shock ward of the field hospital was 4.9 hours, the maximum was 25.2 hours. Plasma volume, plasma protein concentration and the red cell hematocrit reading were determined immediately after admission and again twenty-four hours later, after the patient had received restorative therapy and had been operated on. Further determinations were made subsequently during convalescence. Seventeen of the 100 patients died under observation without recovering sufficiently to be evacuated to the rear. The amounts of blood and plasma administered were recorded. From the patient's weight his theoretic normal blood volume was computed, by the use of standard normal values obtained from the study of normal soldiers. Assumptions are involved in such calculations which render the data tentative and suggestive in value rather than decisive and final. The biochemical methods used have been previously described.[1]

TABLE 2.—*Average Values in Percentage of Normal for Plasma Protein Concentration, Hematocrit, Plasma Volume and Blood Volume at Varying Intervals After Severe Wounding in Eighty-seven Patients*

Interval After Wounding, Days	Plasma Protein Concentration, Percentage of Normal		Hematocrit, Percentage of Normal		Plasma Volume, Percentage of Normal		Blood Volume, Percentage of Normal	
	Average	No. of Observations	Average	No. of Observations	Average	No. of Observations	Average	No. of Observations
Initial	82.5	71	86.6	86	89.6	84	81.3	84
1 to 4	90.0	114	79.6	102	105.5	44	91.3	44
5 to 8	90.3	50	77.6	50	100.0	7	85.4	7
9 to 12	91.6	33	83.7	33	105.8	12	94.1	12
13+	93.6	9	91.8	22	103.4	7	97.3	7

From the data shown in table 1 reduction in the blood volume of the patients is found to be the rule just after admission. Despite the fact that the average patient had received a pint of plasma and a small amount of blood, his blood volume was under 80 per cent of normal. Twenty-four hours later, by which time 950 cc. of plasma and 1,310 cc. of blood had been administered, the average blood volume had risen to 95 per cent. Considerable variation is evident, and in some instances the initial blood volume appeared to be normal. Furthermore in some cases oligemia was still present at the end of twenty-four hours despite replacement therapy. Presumably further loss of blood took place in such cases before, during or after surgical intervention. With respect to dosage of blood and plasma, the figures suggest that in an occasional case the oligemia was overcorrected. Undercorrection was much more common, however. This is brought out by considering the average value for blood volume at the end of twenty-four hours. Not only was the average still 5 per cent below normal, but there was an associated reduction in the hematocrit reading and in the plasma protein concentration. If these data are valid one must infer that the average soldier receiving a serious shock-producing wound must be given at least 2,000 cc. of blood if the volume of blood is to be restored to approximately normal at the end of twenty-four hours. This presupposes that further blood or plasma loss of consequence does not occur during treatment. Studies made on these patients later show that the quantity of blood required to repair the immediate oligemia of shock is insufficient to maintain normal hemoglobin and plasma protein values during the early period of the repair of the wound and convalescence. This point is brought out in chart 1 and table 2.

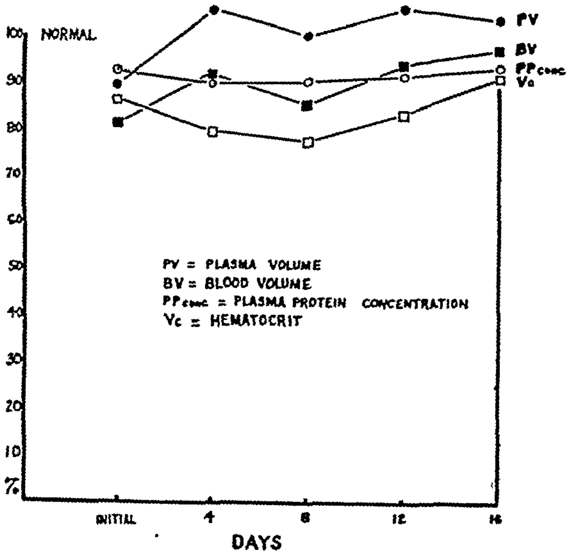


Chart 1.—Data on the blood during wound repair and convalescence.

The data shown graphically in chart 2 suggest that in traumatic shock some correlation exists between the extent of lowering of systolic blood pressure and the degree of oligemia. Line *A* is based on data for 5 patients admitted with systolic blood pressure of zero. Their average initial blood volume was 58.7 per cent, and twenty-four hours later after treatment including surgical intervention the average was 91.7 per cent. Line *B* similarly is based on data for 20 patients admitted with an initial systolic blood pressure of less than 100. The initial average blood volume was 77.5 per cent, and twenty-four hours later it was 87.4 per cent. Line *C* is based on data for 21 patients whose systolic blood pressure at the time of admission was 100 or over. The initial average blood volume was 81.6 per cent, as contrasted with a value of 93.2 per cent twenty-four hours later. Furthermore, if the entire group of severely wounded casualties is divided in this manner according to the initial reading of the blood pressure, it is found that the amounts of plasma and blood administered in the first twenty-four hours showed some correlation with the blood pressure readings. The lower the blood pressure, the greater the amount of blood and plasma considered clinically necessary and given in restorative therapy. The severity of traumatic shock, the extent of reduction in blood pressure, the degree of oligemia and the amount of blood and plasma judged necessary in treatment appear to be related variables in the data from the group studied.

---

[1] Stewart, J. D., and Warner, F.: Observations on the Severely Wounded in Forward Field Hospitals, with Special Reference to Wound Shock, Ann. Surg. **122**: 129 (Aug.) 1945.

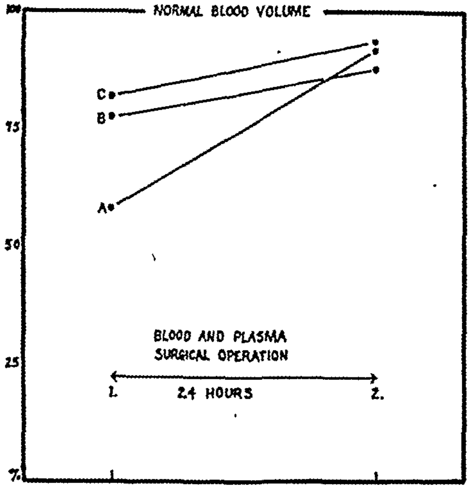


Chart 2.—Blood volume before (point 1) and after (point 2) therapy in wound shock expressed as the percentage of normal.

It is impossible to determine accurately by measurements of the blood volume how much blood has been lost as a result of wounds in any individual case for at least two reasons. The normal value for the particular person cannot, of course, be computed with precision. In the second place life-saving compensatory mechanisms have been activated, and reserves of hemoglobin, plasma protein and fluid have been brought into circulation. However, by the use of average values and a sufficient volume of data some idea can be obtained of the minimum amount of blood which must have been lost to produce the reduction in blood volume which is observed. Table 1 shows an average initial deficit in blood volume of 20 per cent, which amounts to 1,160 cc. when related to the standard average normal for the method. To this must be added 610 cc., which was the average amount of blood and plasma previously administered. This indicates that at least 1,770 cc. of blood had been lost on the average by each patient. To this should be added the unknown but certainly not inconsiderable quantity of mobilized reserves, and it appears likely that the average loss of blood was 2,500 to 3,000 cc., or about half the normal volume of blood.

The picture of traumatic or secondary shock due to penetrating, perforating, lacerating or crushing wounds is subject to considerable variation. The interdependent physiologic responses, largely protective in nature, which color the clinical picture are complicated and as yet imperfectly understood.[31] A typical group of reactions is to be expected, but not enough emphasis has been laid on the frequency with which one or more components is absent. The peripheral veins may be collapsed or full, the skin may be wet or dry, nausea may or may not be present; instead of mental lethargy, alertness and even excitement may be a striking observation. The pulse rate may be normal rather than rapid, and even hypotension may be lacking in a patient who has all the other earmarks of traumatic shock. The life-sustaining adjustments are the reactions of stress, transitory and delicately balanced. Indeed, the most characteristic feature of traumatic shock is the lability of the state and the rapidity with which either improvement under proper therapy or decline may take place. Nevertheless, a reduction of the blood pressure and oligemia were found to be reasonably constant, measurable factors in this group of cases.

The depletion of blood volume in traumatic shock could conceivably be due to loss of water and electrolytes, loss of plasma or loss of whole blood. Accordingly, the concentrations of plasma protein, red cells and nonprotein nitrogen in the plasma were of interest. Values are shown in table 3. It was found that the average concentration of protein in the plasma on admission was 6.5 Gm. per hundred cubic centimeters and that the average red cell hematocrit reading was 37.5 per cent. The average nonprotein nitrogen value in the plasma was 30.8 mg. per hundred cubic centimeters (not shown in the table). These values are to be compared with average normal values for healthy soldiers of a concentration of 7.0 Gm. per hundred cubic centimeters for plasma protein and 43.3 per cent for the hematocrit. The plasma nonprotein nitrogen value offers confirmatory evidence of the absence of anhydremia. Hemodilution, which is a characteristic physiologic response to severe hemorrhage, was a uniform finding in this group of patients. Patients with burns were not included in the study.

Table 3.—*Plasma Protein Concentrations and Hematocrit Values in Normal Soldiers and in Essentially Untreated Wound Shock*

	Plasma Protein Concentration, Gm./100 Cc.				Hematocrit, Percentage			
	After age	High	Low	No. of Observations	Average	High	Low	No. of Observations
Normal.......	7.0	8.0	6.2	42	43.3	50.5	37.5	42
Wound shock	6.5	7.5	5.1	71	37.5	60.0	17.0	86

If one considers the typical hematic changes in wound shock, namely oligemia and reduction in concentration of hemoglobin and plasma protein, there seems to be little room for debate over the relative merits of plasma and blood in repair. The injection of plasma will unquestionably lead to an elevation of blood volume, but only at the price of further dilution of circulating hemoglobin. Theoretically there might be sufficient improvement in the flow of blood to offset temporarily the lowering of the concentration of hemoglobin, but a dangerous and false sense of security would be the result. The evidence indicates that massive quantities of blood have been lost, externally, into body cavities or into damaged tissues. Relief of tissue anoxia under the circumstances is an urgent requirement to be met by replacement of circulating hemoglobin values and improvement in the amount of oxygen carried by the blood.

In connection with the question of the amount of blood and plasma required in the restorative therapy of traumatic shock, it was pertinent to observe the character of the blood during further convalescence. In table 2 are shown data which bear on this point. Average values for plasma protein concentration, hematocrit reading, plasma volume and blood volume are shown in per cent of the standard normal. The same data are shown graphically in chart 1. It is evident that blood volume, plasma protein concentration and the hematocrit reading remained low for days or weeks. Plasma volume, on the other hand, soon became normal or even slightly above normal. Here is seen an interesting physiologic adjustment, if the data can be taken at face value. The persistent deficit of hemoglobin and plasma protein is accompanied by overdilution, and some sacrifice of concentration is made in restoring the volume of blood to normal. Some of these patients received plasma and hemoglobin during convalescence, but it is clear that neither in replacement therapy for shock nor in convalescence were large enough volumes of blood and plasma administered.

The persistence of anemia, hypoproteinemia and oligemia in the severely wounded can be variously explained, apart from the large initial losses of blood involved. Starvation during convalescence, sepsis and abnormal catabolism of protein, losses in weeping wounds and inflamed serous membranes, the demands of wound healing, depression of the bone marrow and liver, and the unexplained large urinary nitrogen losses known to follow trauma all may play a part. Such deficiencies should obviously come under vigorous treatment as a part of the successful management of severe trauma.

A question of critical importance in wound shock is when to proceed with the definitive surgical operation. How long should operation be postponed in the hope that the patient is making further response to blood transfusion, oxygen therapy and the administration of morphine? In many instances the surgical operation itself is essential to resuscitation, especially in continuing internal hemorrhage or in perforations of the intestine through which gross contamination of the peritoneal cavity is taking place, in lacerations of bile ducts or in abdominal evisceration. Clinical evaluation of the individual case rather than any rule of thumb is the principle to be applied, and with increasing experience fewer mistakes are made. The treatment of the state of shock by transfusions of blood and oxygen therapy can be continued during and after surgical intervention, and shock treatment and surgical operation must not be set apart as two different problems. The best results come from fixing responsibility for preoperative care, surgical operation and aftercare on the same surgeon. The continuity of management obtained in this way makes possible intelligent, critical and efficient treatment of the physiologic disturbances as well as the technical surgical problem in the case. In the group of cases under discussion the average interval between admission to a field hospital and surgical intervention was 4 hours. The response of systolic blood pressure, the amount of blood given and the location and suspected nature of the wounds were factors commonly considered in deciding when to proceed with the operation.

Of the 100 gravely wounded patients who form the basis of this study, 17 died under observation in the forward field hospitals. Nine of these deaths occurred within forty-eight hours after admission. Of the 9 patients who survived forty-eight hours or less, 2 died with aspiration of vomitus during anesthesia as a conspicuous phenomenon, 1 had severe blast injury of both lungs, 1 had gross feculent peritonitis from multiple intestinal wounds. This leaves a group of only 5 patients whose death is to be considered in relation to a possible state of "irreversible shock." Persistent hemorrhage and insufficient replacement of blood could not be excluded as likely causes of death in any of these 5 patients. The conception of irreversibility did not, therefore, appear to be an important consideration in these cases.

It should be pointed out that this paper has been largely concerned with wound shock due to severe trauma, not including burns, and for the most part still uncomplicated by such lesions as clostridial myositis, spreading peritonitis or pulmonary thromboembolism. Such complications may produce recurrence of the state of secondary shock as a separate episode, however, distinct from the picture of wound shock.

SUMMARY

In wound shock the usual findings are reduction in blood volume, reduction in plasma protein concentration and lowering of the hematocrit reading. From the data presented it is concluded that loss of blood is the dominant etiologic factor. Anemia, hypoproteinemia and oligemia may persist during convalescence, which points up the need for complete restoration of blood losses during the management of wound shock.

REPLACEMENT OF BLOOD IN MANAGEMENT OF WOUNDS

HOWARD E. SNYDER, M.D.
Winfield, Kan.

Recognition of the extent of loss of blood in the wounded and the all important role this loss plays in traumatic shock has led to an improved and rational program in the management of shock. The war provided many lessons in the management of shock; yet the full significance of these lessons is not widely known.

American forces invaded North Africa in November 1942. Medical department units supporting these troops were well supplied with dried plasma and necessary apparatus to administer this plasma in a most efficient fashion. However, little or no preparation had been made for the administration of whole blood. In these first few months the response of the wounded in shock to the administration of large quantities of plasma was most gratifying. At the same time, however, the need for the transfusion of whole blood in many of the casualties became apparent. In the first three weeks in Oran, Africa, the Seventy-Seventh Evacuation Hospital reported the use of more blood than plasma in the management of battle casualties.[1]

. Read in the symposium on "Wound Management" before *the Section* on Surgery, General and Abdominal, at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 5, 1946.

[1] Report 77th Evacuation Hospital to II Corps Surgeon, December 1943.

Early in 1943 in Tunisia, North Africa, where many more fresh battle casualties were admitted to the hospitals, plasma again accomplished much and received considerable praise. Again, however, there were some of the more severely wounded soldiers who did not react from shock with the administration of plasma, while soldiers with similar wounds responded well to the administration of whole blood. It also was noted that those patients who did react from severe shock after the administration of large quantities of plasma presented a severe anemia during their convalescence. After the Tunisian campaign, which ended May 15, 1943, a report from the Second Corps Surgeon to the Surgeon General[2] included the following statements:

Table 1.—*Blood Used in American Forward Hospitals in the North African and Mediterranean Theaters*

	Battle Casualties Admitted	Pints of Blood Given	Percentage Receiving Blood	Pints per Battle Casualty Transfused
Tunisia................	8,019	446	?	?
Sicily..................	3,909	158	?	?
Italy				
January 1944........	3,530	1,673	24.2	1.96
January-June 1944..	31,218	15,713	21.4	2.35
July-December 1944..	19,522	13,625	30.2	2.31
January-May 1945...	7,967	8,140	40.6	2.52

Data based on reports of hospitals to the Second Corps Surgeon in Tunisia and Sicily and to the Fifth Army Surgeon in Italy.

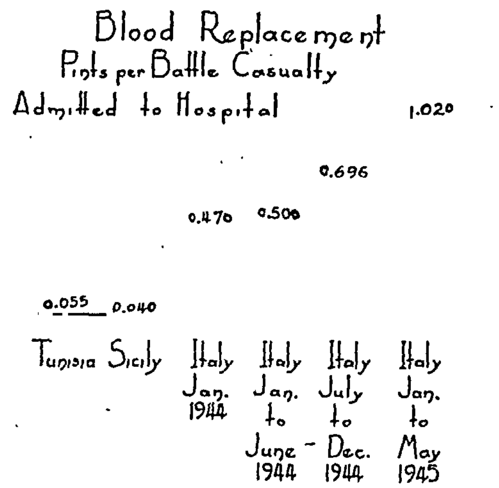
> The treatment of shock with plasma has produced the most sensational and gratifying results. How many lives have been saved that might have been lost without plasma cannot be adequately determined. . . . Where hemorrhage has been a major factor, whole blood must be used as soon as cross-matching can be completed and an adequate amount transfused. . . . A few lives have been lost and morbidity no doubt increased because blood transfusions have not been used soon enough or often enough. This has been true largely because facilities for blood transfusions have been far from convenient and the importance of whole blood transfusions has been overlooked while stressing the importance and value of blood plasma.
>
> Indirect transfusion sets have been improvised from tubing furnished with plasma, empty glucose and saline solution bottles, glass tubing and aluminum tubing secured from wrecked planes, etc. Distilled water necessary for cleaning bottles and tubing and preparing citrate solution has been procurable only with difficulty. Facilities for cross-matching have often been lacking. Donors have usually been available only from the personnel of the medical units. In spite of all this, blood transfusions have been given in collecting stations, clearing stations, auxiliary surgical group team installations, some semi-mobile evacuation hospitals and 750-bed evacuation hospitals. In the 128th Evacuation Hospital in one campaign, donors were secured from service personnel and kept at the hospital until needed. In the last campaign, a certain number of donors were sent daily or twice daily, blood was drawn as soon as they arrived and then stored in a refrigerator until needed. In most instances it was used immediately or within a few hours. The provision of blood from a blood bank with properly prepared sterile tubing, filters and needles, would serve to make whole blood transfusions almost as convenient as plasma transfusion. A standard method of cross-matching should be prescribed and facilities for the same made available. Proper precautions should be taken to avoid the transmission of malaria and syphilis by blood transfusions.

Table 2.—*Plasma Used in American Forward Hospitals in the North African and Mediterranean Theaters*

	Battle Casualties Admitted	Number Receiving Plasma	Percentage Receiving Plasma	Units per Battle Casualty Admitted
Tunisia................	8,019	990	12.3	?
Sicily..................	3,909	791	20.2	?
Italy				
January-June 1944..	31,218	6,307	20.2	0.544
July-December 1944..	19,522	3,212	16.4	0.389
January-May 1945...	7,967	1,711	21.5	0.504

Data based on reports of hospitals to the Second Corps Surgeon in Tunisia and Sicily and to the Fifth Army Surgeon in Italy.

The facilities for the transfusion of blood in Sicily were no better than, if as good as, those available in Tunisia, inasmuch as all the forward hospitals, with one exception, were new units. Experience there led to the same conclusion regarding the need for whole blood.



Blood replacement based on reports from all forward hospitals in the Tunisian, Sicilian and Italian campaigns.

The prolonged campaign in Italy provided the opportunity for improvement in facilities for the transfusion of blood. Even before the establishment of the blood bank, which began delivering blood late in February 1944, hospitals had developed homemade equipment, including homemade vacuum bottles for drawing blood,[3] and established their own blood banks, which made the use of larger quantities of blood possible. Tables 1 and 2 and the accompanying chart give figures on the use of plasma and blood in Corps and Army Hospitals in the North African and Mediterranean theaters of operation.[4] While figures are not available for September to December 1943, it will be seen that by January 1944, before the blood bank was in operation, blood was being used at the rate of 0.474 pint (224 cc.) per battle casualty admitted to the hospitals. In the latter part of February 1944 the first blood was delivered from the American Blood Bank to Fifth Army units at Anzio, Italy. In the period from January to June, 1944, the consumption rose to 0.5 pint (237 cc.) per battle casualty admitted. In the next six months it rose to 0.696 pint (330 cc.) per battle casualty and in the five months of the war in 1945, 1.02 pint (483 cc.) per battle casualty admission was used. It is also interesting to note that in this period the percentage of battle casualties receiving blood rose from 24.2 per cent in January 1944 to 40.6 per cent for the year 1945.

---

[2] Report II Corps Surgeon to the Surgeon General, June 1944.

[3] Sanger, P. W.: Evacuation Hospital Experiences with War Wounds and Injuries of the Chest, Ann. Surg. **122:** 147 (Aug.) 1945.

[4] Reports of II Corps Hospitals to II Corps Surgeon, May 1943 (Tunisian Campaign) and August 1943 (Sicilian Campaign). Monthly reports of Fifth Army Hospitals to Fifth Army Surgeon, January 1944 to May 1945.

TABLE 3.—*Percentage of Deaths in Hospital Battle Casualty Admissions*

	Jan.-March 1944	April-July 1944	Aug.-Dec. 1944	Jan.-May 1945	Total
Percentage dying before anesthesia	1.390	0.680	0.440	0.440	0.752
Percentage dying during anesthesia or surgical operation	0.211	0.141	0.171	0.165	0.167
Percentage dying after anesthesia or surgical operation	2.340	1.620	1.440	1.435	1.671
Total percentage dying in hospital	3.940	2.340	2.050	2.040	2.590

Based on study of 1,411 American battle casualty deaths reported by Fifth Army hospitals Jan. 1, 1944 to May 2, 1945.

The increased use of blood accounted in great part for the reduction in mortality depicted in table 3.

At the same time the use of plasma continued to approximate the figure first attained in the Sicilian campaign when 20.2 per cent of battle casualties were administered plasma. The average amount of plasma given per battle casualty admitted to hospitals likewise varied little from 0.5 of one unit (250 cc.).

The figures given are for the use of plasma and blood in forward hospital installations. With the exceptions of the period in Tunisia when hospitals were far back and one period in Italy when the line was advancing rapidly and blood was furnished to a treatment station of the First Armored Division, the use of blood was restricted to hospital installations, and plasma alone was available in aid stations, collecting stations and clearing stations.

The use of large quantities of plasma in resuscitation of a patient prior to his admission to a hospital often rendered the problem of preparing the patient for surgical intervention more difficult. It was the general feeling that only enough plasma should be given to render the patient transportable to the hospital where whole blood might be used in further resuscitation.

The work of competent investigators did much to improve the management of shock in battle casualties in Italy, furnishing the basis for a revision of ideas on the etiology and treatment of shock and leading to the use of larger quantities of blood. In December 1943 Lalich[5] began to conduct a scientific clinical appraisal of battle casualties in shock and made recommendations which proved sound in the light of laboratory investigations on hematocrit and plasma protein levels which he conducted at Anzio in the spring of 1944. In January 1944 on the Cassino front, Stewart and Warner[6] made the first studies on blood volume and hematocrit and plasma protein determinations in battle casualties. Beecher and Burnett[7] provided further clinical studies with hematocrit and plasma protein determinations on all the most severely wounded soldiers admitted to the Ninety-Fourth Evacuation Hospital. Finally, the work of the Commission for the Study of the Seriously Wounded headed by Simeone,[8] covering the period from autumn 1944 until termination of the war, provided more complete data on the loss of blood and of plasma and the problem of post-traumatic anuria or pigment nephrosis. The results of these investigations became known and were utilized long before any reports were submitted or published.

The laboratory and clinical observations allow the following conclusions to be drawn: 1. Lowered blood volume in the shock of battle casualties is due entirely to the loss of whole blood and not to loss of plasma except in those cases in which there is gross peritoneal or pleural contamination, beginning sepsis, gas gangrene, a burn or a crush injury. 2. When whole blood has been lost, whole blood is the replacement medium of choice, particularly when the loss has been large.

While reduced blood volume is usually the most important etiologic factor in shock, it is often not the only factor. Cardiorespiratory embarrassment may be an extremely important factor in many cases of shock and when present must be managed with the same promptness as is reduced blood volume.[9] A sucking wound of the chest, a painful wound of the thoracic wall hindering the respiratory movement, a large amount of blood or air in the pleura, a dilated stomach, cardiac tamponade and the presence of blood and mucus in the tracheobronchial tree are all conditions which demand immediate attention in the person who is in shock.

Gross contamination of the peritoneal and pleural cavities with contents of the gastrointestinal tract and early sepsis in these cavities or in any wound constitute other important factors in shock and demand early surgical intervention for relief.

Pain likewise contributes to shock. The judicious use of a salt of morphine, the proper splinting of wounds of the extremities, nerve block with procaine hydrochloride and early surgical intervention are used in its control.

TABLE 4.—*Etiologic Classification of Shock in Five Hundred and Twenty-Three Fatal Cases*

	No. of Cases
Trauma and hemorrhage	182
Trauma and hemorrhage plus contamination or sepsis	120
Trauma and hemorrhage plus cardiorespiratory embarrassment	147
Trauma and hemorrhage plus contamination or sepsis plus cardiorespiratory embarrassment	72
Type undetermined	2
Total	523

Shock may be divided into four broad categories on the basis of etiologic factors: (1) trauma and hemorrhage alone; (2) trauma and hemorrhage plus contamination or sepsis; (3) trauma and hemorrhage plus cardiorespiratory embarrassment, and (4) trauma and hemorrhage plus contamination or sepsis, plus cardiorespiratory embarrassment. Table 4 shows the distribution of shock among these four categories in 523 casualties in which the immediate cause of death was shock.[10]

---

[5] (*a*) Lalich, J. J.: Transfusion Therapy in the Battle Casualty Exhibiting Evidence of Circulatory Failure, Report to the Commanding Officer, Second Auxiliary Surgical Group, June 1944; Hematocrit and Plasma Protein Findings in Battle Casualties Treated in a Field Hospital, Report to Surgeon Mediterranean Theater of Operations, United States Army, November 1944. (*b*) Lalich, J. J., and Mason, J. M., III.: Resuscitation of Severely Wounded Battle Casualties, Surgery **18**: 741 (Dec.) 1945.

[6] Stewart, J. D., and Warner, F.: Observations on the Severely Wounded in Forward Field Hospitals, with Special Reference to Wound Shock, Ann. Surg. **122**: 129 (Aug.) 1945.

[7] (*a*) Beecher, H. K., and Burnett, C. H.: Field Experience in the Use of Blood and Blood Substitutes in Seriously Wounded Men, M. Bull. North African Theat. Op. **2**: 2 (July) 1944. (*b*) Beecher, H. K.: Preparation of Battle Casualties for Surgery, Ann. Surg. **121**: 769 (June) 1945.

[8] Simeone, F. A.: Personal communication to the author.

[9] Snyder, H. E.: The Management of Intrathoracic and Thoracoabdominal Wounds in the Combat Zone, Ann. Surg. **122**: 333 (Sept.) 1945.

Blood replacement therapy must be integrated in a program dealing with all etiologic factors in shock. Surgical intervention is an essential part of this program. It frequently must be performed before the person is completely resuscitated from shock and as a part of the resuscitative program.

Immediately on the admission of a battle casualty or any wounded person, a rapid complete appraisal or examination must be made to determine: (1) the blood pressure and pulse rate, (2) the nature and extent of the wounds, (3) the probable extent of loss of blood, (4) the presence or absence of wounds, injuries or conditions leading to cardiorespiratory embarrassment, (5) the possibility of contamination or sepsis in the peritoneal or pleural cavities, (6) the presence or absence of early sepsis or gas gangrene in any part of the body and (7) the presence or absence of pain.

As this primary examination is rapidly made, indicated resuscitative measures are initiated. The head is lowered and blankets are applied to conserve body heat. (The application of external heat has been found undesirable.) In those persons in whom a blood pressure reading cannot be obtained, administration of low titer group O blood should be immediately started through a cannula in a vein at the ankle. The first 500 cc. of this blood may be given in as short a time as five to ten minutes, and if there is no response of blood pressure to this, the next 500 cc. may be given as rapidly. (All blood after the first 1,000 cc. must be cross matched.) Once a systolic blood pressure of 70 mm. of mercury has been obtained, the rate of transfusion should be decreased. In these patients in severe shock, the administration of oxygen is always indicated. If a systolic blood pressure of 50 to 60 mm. of mercury cannot be obtained by the rapid administration of 1,000 to 1,500 cc. of blood, immediate surgical intervention may be indicated to control continuing hemorrhage or to deal with gross contamination of the peritoneal and/or pleural cavities or perhaps to excise tissue or a limb rendered necrotic by clostridial myositis. Meanwhile, the transfusion of blood should be continued while the patient is moved to the operating table, as an interruption in the administration of blood in those patients with continued bleeding or in those in whom ample blood has not been replaced may lead to a dangerous, undesirable drop in blood pressure. It is well to have the cannula in place with blood running in, particularly in abdominal and thoracic wounds, so that in the event of any loss of blood at the time of the surgical intervention, it may be immediately replaced by the use of pressure, if necessary, to secure the desired rate of flow.

Observations at operation may dictate the type of further replacement therapy. In abdominal wounds, peritonitis and/or gross contamination of the peritoneum with feces without much blood in the peritoneum calls for plasma therapy rather than for the administration of more blood.

It has been found desirable to administer 1,000 cc. more blood or plasma after the systolic blood pressure approximates normal. This rule applies as well in those cases in which the shock is not of such severity. In the management of shock of less severe grade, all blood is cross matched. One or two units of plasma (500 to 1,000 cc.) may be given while this is being accomplished. The blood is then given less rapidly, usually at a rate approximating 1 pint (473 cc.) in thirty minutes.

While plasma or blood is running in, other indicated procedures are performed. Aspiration of hemothorax, pneumothorax or hemopericardium is accomplished. Uncontaminated aspirated blood may be filtered and autotransfused. Blood and mucus in the trachea and bronchial tree may be aspirated by tracheal catheter or bronchoscope if the patient cannot cough them up.

Pain may be relieved, deep breathing promoted and cough facilitated in painful wounds of the chest by procaine hydrochloride block of the involved intercostal nerves. Small doses of a solution of a salt of morphine and atropine administered by the intravenous route may be indicated. Continued bleeding in an extremity may call for the use of the tourniquet. The tourniquet is also used at or below the contemplated site of amputation in limbs hopelessly damaged by trauma or infection. Painful wounds of the extremities must be properly splinted. A nasogastric tube is passed in all thoracic and abdominal wounds. Preoperative roentgenologic examination is desirable in all cases. It is occasionally omitted in instances where emergency surgical intervention cannot be delayed. In many cases blood transfusion is continued without interruption throughout the radiologic examination, the trip to the operating table and the surgical procedure. The use of a cannula tied in a vein is most satisfactory in such cases. The practice of cutting down on a vein and tying in a cannula became routine and was felt to be timesaving in all who were admitted with collapsed veins. With a cannula in place. blood could be pumped in at any desired speed. This latter procedure is not without danger and should be reserved for emergencies only. One case of fatal air embolism was reported as resulting from this practice. when it was not noticed for a few seconds that the bottle had emptied of blood.

Lalich and Mason [5b] have called attention to the need for the replacement of blood in that group of casualties in which there is impending peripheral circulatory failure. Those patients whose systolic blood pressure is 90 or more and whose pulse rate is a little rapid but who have wounds of such an extent and number as to indicate impending shock should be given a transfusion of 1,000 cc. of blood prior to surgical intervention. When this has not been done, precipitous falls in blood pressure have occurred during radiologic examinations or surgical operation. Traumatic amputations frequently fall in this group.

Further transfusion of whole blood is frequently necessary in the postoperative period, during which all observers have noted the appearance of anemia. An effort was made to secure normal hematocrit readings on all patients with severe abdominal and thoracic wounds early in their postoperative course. In those with less severe wounds, it was felt desirable that the hematocrit readings should be at least 35 before the patient was evacuated.

---

[10] Snyder, H. E., and Culbertson, J. W.: Study of Fifth Army Hospital Battle Casualty Deaths: A Preliminary Report to the Surgeon, Fifth Army, September 1945.

Forward hospitals actively engaged in caring for battle casualties are ideally furnished with blood from a base transfusion unit well in the rear. The blood furnished is all group O but titered for anti A and anti B agglutinins. When these agglutinins are in a titer greater than 1 to 64, the bottle is labeled for group O recipients only. Low titer group O blood, or blood in which the anti A and anti B agglutinins are present in a titer less than 1 to 64, is reserved for group A, group B and group A-B recipients and for use in emergencies without cross matching in amounts up to 1,000 cc. The blood used in the Mediterranean theater was drawn in Baxter vacuum bottles containing citrate, and after drawing the blood the bottles were topped with dextrose solution as a preservative. All blood was used within seven days of the time it was drawn. It was carefully checked for group by at least 2 persons on two different specimens. The contents of every bottle were also checked for syphilis and malaria, and blood was not drawn from donors who gave a history of jaundice, malaria or syphilis. To each bottle of blood was attached a small bottle of uncitrated blood which was used for cross matching. The blood was refrigerated immediately after it was drawn and was transported in cork-insulated boxes when it had to be flown to the front. When deliveries could be made by truck from the base transfusion units, the blood was kept in a refrigerator right up to the time it was delivered to the hospitals where, of course, it was immediately placed in another refrigerator.

The transfusion of whole blood was found to be a most essential measure in the management of battle casualties in the general hospitals in the base, prior to and during the time of reparative surgical intervention. Lyons and Hampton [11] definitely demonstrated the value of the transfusion of large quantities of whole blood along with penicillin therapy in preparing battle casualties for reparative operations. Five hundred to 1,000 cc. of blood was given daily until normal hematocrit readings were obtained. This regimen, followed by surgical procedures designed to remove all necrotic tissue, clots or exudate and to eliminate dead space, led to remarkable results in infected or otherwise complicated wounds.

In 1944 and 1945, 68 patients are known to have died in Fifth Army Hospitals of a pigment nephropathy or nephrosis of the lower part of the nephron. In 31 other cases nephrosis contributed to death.[9] A few of these cases were due primarily to the administration of sulfonamide compounds. A few were known to be due to mismatched transfusions. Extensive work on this subject by the Commission on the Study of the Seriously Wounded [7b] would indicate that in the vast majority of instances the transfusion of blood was not the underlying factor, but that the condition was due to other factors probably depending on a severe degree of shock over a considerable period of time. In those instances in which pigment nephropathies developed in the wounded who had received group O blood from the base blood bank, it was found that the incidence of nephropathy in the four groups of blood paralleled the normal incidence for each of the blood groups.

The blood bank furnished blood only to the forward hospitals. It was considered desirable even in forward evacuation hospitals to have facilities at hand at all times for the grouping and cross matching of type-specific blood drawn on the spot, so that in the event of failure to deliver blood from the blood bank, facilities for the transfusion of blood would not be entirely lacking. In the general and station hospitals in the base, each hospital maintained its own blood bank of type-specific blood. It is not the purpose of this paper to discuss the merits or demerits of universal donor blood versus type-specific blood in installations when time and facilities permit the use of the latter. However, it is definitely established that in forward hospitals receiving large numbers of battle casualties fresh from the field, the use of group O universal blood is much preferred to the use of type-specific blood.

The advantages of adequate blood replacement with whole blood are manifold. Mortality from shock is lowered. Prolonged adequate surgical intervention is possible when the replacement of blood is adequate. Operations which lasted three to five hours were not uncommon; in a number of instances they lasted even longer with satisfactory results. In the early days a few wounded persons lost their lives because surgical intervention was inadequate or was cut short due to the patient's poor condition and to the fact that gas gangrene later developed in an undebrided or inadequately debrided wound. Adequate replacement of blood shortens convalescence. It reduces morbidity. It permits early radical reparative surgical operations.

Lessons learned in the management of battle casualties insofar as the replacement of blood is concerned have their application in civilian surgical practice. It is desirable to have low titer group O blood available for use in emergencies which occur with severe wounds or with emergencies which occur because of unexpected bleeding at the operating table. It is desirable to replace all lost blood with whole blood. It is desirable to start all elective surgical intervention with a normal blood count and blood volume. In emergency operations an effective volume of circulating whole blood should be secured by the time the operation is completed or shortly thereafter. Repeated transfusions of blood to maintain a normal hematocrit or blood count are desirable in all cases of infected or complicated wounds.

SUMMARY

Adequate timely replacement of blood was an exceedingly important factor in the reduced mortality of battle casualties admitted to hospitals in World War II. Clinical observation followed and substantiated by laboratory investigation led to the recognition of the loss of whole blood rather than of plasma as the cause of reduced blood volume in most cases of shock encountered in the wounded. Rapid replacement of whole blood properly coordinated with other resuscitative measures (including surgical intervention) was found essential to the successful management of those patients in severe shock. Adequate replacement of blood not only tended to lower mortality but decreased morbidity, hastened convalescence and permitted extensive early reparative surgical operations. In forward hospitals banked group O blood titered for anti A and anti B agglutinins was found most satisfactory. Methods of blood replacement developed in the management of battle casualties can be applied in civilian surgical practice.

103½ East Ninth Avenue.

---

[11] Lyons, C., and Hampton, O. P., II.: Personal communication to the author. Hampton, O. P., II.: Reparative Surgery of Compound Battle Fractures in the Mediterranean Theater of Operations, Ann. Surg. **122**: 289 (Sept.) 1945.

THE BACTERIOLOGY OF OPEN WOUNDS

ROBERT RUSTIGIAN
Medford, Mass.
and
ARTHUR CIPRIANI
Brooklyn

Bacteriologic studies in Italy and elsewhere[1] during the late war have confirmed the presence of diverse bacteria in war wounds. As part of a study of penicillin therapy in the management of wounds in Italy a total of 214 types of bacteria were isolated from 27 infected and 9 clinically clean wounds.[2] The decidedly anaerobic environment of the bacteria in these traumatic injuries was emphasized by the fact that 45.3 per cent, or 97 of the 214 isolates, representing several genera, were obligatory anaerobes and 15.9 per cent, or 34 cultures, namely streptococci and micrococci, were microaerophiles. Eleven defined and 5 arbitrary groups were represented. From 8 to 10 species or types were recovered from 10 of the infected wounds, at least 5 from 21 and no less than 3 species or types were recovered from any 1 of the infected wounds. The clean wounds differed from the infected wounds in the absence of pyogenic cocci. This difference may be associated with the time of the study after injury, since the average time was six days for the clean wounds as compared to twenty-three days for the infected wounds.

The technical procedures of isolation and study of the cultural, physiologic and toxic properties of the various bacteria are embodied in another report.[3] It is known that some obligatory anaerobes, including bacilli, cocci and fusobacteria, are fastidious nutritionally and grow slowly on complex mediums.[4] Technical difficulties are further introduced by the ability of Proteus and many species of Clostridium to spread on solid mediums. In view of such facts and certain observations, no claim is made that the isolation of all bacteria in each of the wounds was successful.

Although the bacterial flora of war wounds is complex, the frequency of isolation of certain bacteria in this and other studies of both war and accidental wounds[5] permits, within limits, delineation of characteristic wound floras. Beta hemolytic streptococci, Staphylococcus aureus, Staphylococcus albus, enteric streptococci, Clostridium, *Proteus*, *Pseudomonas* and coliform bacteria appear to be the species most frequently encountered. Other types less frequently reported include undifferentiated streptococci, anaerobic streptococci, micrococci, bacteroides, diphtheroids and bacilli. A characteristic wound flora may signify that there are limitations to the types of bacteria which find an environment suitable to their growth and nutritional requirements. The predominance of certain species at various stages of an infection or with certain types of infection might denote, in part, a more optimal nutritional substrate for their differential metabolic needs.

It is not emphasized sufficiently that defined pathogenic bacteria may comprise part of the wound flora without manifesting their cardinal clinical attributes. Recently proteolytic bacteria without defined pathogenicity have gained clinical importance in infected wounds. Lyons has reported[2] that through septic decomposition of devitalized tissue by proteolytic bacteria the necrosis of living tissue may occur as a secondary consequence. Any further references to clinical data unless otherwise noted are taken from Lyons' studies which constitute the clinical counterpart of this bacteriologic report.

In view of the foregoing considerations, the 214 bacteria isolated were differentiated under three functional entities: (1) toxigenic and/or invasive, (2) proteolytic and (3) wound commensals (table 1).

The proteolytic bacteria were defined by their ability to attack one or more of the following protein substrates: cooked meat medium, Loeffler's blood serum medium (Difco), fibrin clot, casein[6] and gelatin. Those bacteria which did not attack these substrates but which produced hydrogen sulfide and/or visible gas from secondary protein derivatives were differentiated under the proteolytic group (table 2).

Because of their observed role in local necrosis the bacteria which hydrolyzed proteins were designated as

TABLE 1.—*Functional Differentiation of Two Hundred and Fourteen Species of Bacteria Isolated from Thirty-Six War Wounds*

Toxigenic and/or Invasive Bacteria		Proteolytic Bacteria: Hydrolyzing Proteins		Proteolytic Bacteria: Producing H_2S and/or Visible Gas from Peptones		Commensal Bacteria	
Staph. aureus	14	Cl. sporogenes	22	[illegible]	6	Streptococcus, enteric	21
Hemolytic streptococci	7	[illegible]	8	[illegible]	1	Streptococcus, undifferentiated	17
Cl. perfringens	7	[illegible]	1	[illegible]	4	Streptococcus, anaerobic	4
Cl. novyi	2	[illegible]	4	[illegible]	5	Streptococcus, alpha hemolytic	1
Cl. septicum	2	[illegible]	1	Total	16	Staph. albus	2
Clostridium, unidentified	1	P. mirabilis	1			[illegible]	1
Total	33	Ps. aeruginosa	4			[illegible]	[illegible]
		[illegible]	1			[illegible]	[illegible]
		[illegible]	4			Micrococcus, aerobic	1
		[illegible]	3			Aerobacter	7
		[illegible]	4			[illegible]	2
		[illegible]	1			[illegible]	2
		[illegible]	5			[illegible]	6
		[illegible]	1			[illegible]	2
		[illegible]	1			Bacillus	3
		[illegible]	2			Gram-negative bacilli	3
		Total	63			Gram-positive bacilli	2
						Total	102

Abstracted from A Report to the Office of the Surgeon, Mediterranean Theatre of Operations, 1945.

Read in the symposium on "Wound Management" before the Section on Surgery, General and Abdominal, at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 5, 1946.

Dr. Champ Lyons, Tulane University of Louisiana School of Medicine, aided in making this investigation possible and in the preparation of the manuscript; Dr. C. A. Stuart, Brown University, Biology Department, assisted in the preparation of the manuscript.

[1] MacLennan, J. D.: The Anaerobic Infections of War Wounds in the Middle East, Lancet 2: 63, 1943.

[2] Lyons, C.: An Investigation of the Role of Chemotherapy in Wound Management in the Mediterranean Theatre, Ann. Surg. 123: 902, 1946.

[3] Rustigian, R.; Lyons, C., and Cipriani, A.: Bacteriological Investigation of War Wounds: A Report to the Office of the Surgeon, Mediterranean Theater of Operations, 1945.

[4] Weinberg, M.; Nativelle, R., and Prévot, A. R.: Les microbes anaérobies, Paris, Masson & Cie, 1937.

[5] Altemeier, W. A.: The Bacteriology of War Wounds: Collective Review, Internat. Abstr. Surg. 75: 518, 1942.

[6] The experimental casein medium employed was furnished by Mr. G. H. Dunham, Difco Laboratories Incorporated, Detroit, Mich.

wound pathogens, thus denoting their clinical significance but at the same time differentiating them from invasive and defined toxic bacteria. The commensal group included those bacteria which could not be allocated to the true pathogens or proteolytic group. They probably utilize part of the nutritional complex of wound substrates but by themselves do not appear to be significant clinically. It becomes apparent that with strain differences among certain species or types inconsistencies will occur between their taxonomic and functional segregation. For example, 1 strain of aerobacter which liquefied gelatin was placed in the proteolytic group while 7 others which were negative for the liquefaction of gelatin were placed in the commensal group.

Fourteen strains of Staph. aureus and 7 of beta hemolytic streptococci were recovered from 19 infected wounds. All strains of Staph. aureus except one were hemolytic on blood agar at 37 C., and 11, including the nonhemolytic strain, were coagulase positive. Six strains partially attacked fibrin clot; 8, including 3 of the fibrinolytic strains, liquefied gelatin. Seven strains showed positive correlation for pigment production, hemolysis (37 C.), coagulase activity and mannitol fermentation. Five of the 7 beta hemolytic streptococci were available for further study. Four belonged to Lancefield serologic group A and one to group C. The proteolytic activity of the hemolytic streptococci was limited to fibrinolysis in this study.

All other cocci were placed in either the proteolytic or the commensal group (table 1). Three Staph. albus and 2 nonpigmented staphylococci were neither hemolytic nor coagulase positive. One strain of each liquefied gelatin. In addition to the pyogenic streptococci, 22 enteric streptococci, 17 undifferentiated nonhemolytic streptococci and 8 anaerobic streptococci were recovered. The enteric streptococci were isolated from 22 wounds, including 5 clean ones, and were surpassed in frequency of isolation only by species of Clostridium. Nine cultures were isolated by direct aerobic plating and 4 by aerobic plating from anaerobic broth. The remaining 9 cultures could be isolated only by anaerobic plating from anaerobic broth but did grow aerobically with the first subculture. Similar relationships were found among the undifferentiated streptococci. These results suggest degrees of adaptation between aerobic and anaerobic environment. Three of the 22 enteric streptococci were hemolytic on blood agar. All but 1 culture were placed in the commensal group. The single proteolytic type liquefied gelatin, caused some digestion of casein and slightly liquefied Loeffler's blood serum medium.

The 17 undifferentiated streptococci recovered from 11 of the infected and 3 of the clean wounds were classified as commensals. One culture produced weak hemolysis on isolation but was negative on subsequent platings and gave no reaction in Lancefield's grouping serums A, B and C. Eleven cultures were microaerophilic. Eight of these demonstrated some fastidious nutritional requirements in that they failed to grow in 1 per cent Bacto-tryptose broth with 0.3 per cent beef extract and 0.5 per cent sodium chloride. Fermentation tests were valueless for further definition of types in the group. It is possible that a few of the cultures which demonstrated carbohydrate activity might be similar to members of the lactic acid group of streptococci.[7]

Eight anaerobic streptococci were recovered from 6 of the infected wounds and 1 from a clean wound. Isolated colonies did not show hemolysis, although 4 cultures produced hemolysis at the heavily crowded area of streak plates. The same 4 cultures were proteolytic, although their reactions were delayed. They caused digestion of milk of iron and casein (seven to fourteen

Table 2.—*Proteolytic Activity of Bacteria Which Digested One or More Protein Substrates or Produced Hydrogen Sulfide and/or Visible Gas from Secondary Protein Derivatives*

	Number of Strains	Cooked Meat	Loeffler's Blood Serum	Fibrin Clot	Casein	Gelatin	H_2S	Gas from Proteose Peptone
Cl. sporogenes	22	+	+	+	+	+	+	+
Cl. putrificum group	4	+d	+d	+	+d	+	+	—
	2	+d	+d	0	+d	+	+	—
	1	—	+d	0	+	+	+	—
	1	—	—	0	+	+	+	—
Cl. bifermentans	1	—	+	0	+	+	+	+
Clostridium, unidentified	1	—	—	0	—	+	+	—
Clostridium, unidentified	3	—	—	0	+	+	+	+
Cl. perfringens	3	—	—	0	—	+	+	+
	4	—	—	0	—	+	+	+
Cl. novyi	2	—	—	0	—	+	+	+
Cl. septicum	2	—	—	0	—	+	—	+
Clostridium, toxigenic	1	—	—	±	—	—	—	—
Cl. tertium	3	—	—	0	—	—	+	+
	3	—	—	—	—	—	+	—
Cl. sphenoides	1	—	—	—	—	—	+	—
Clostridium, unidentified	4	—	—	—	—	—	+	—
P. vulgaris	1	—	+	+p	+s	+	+	—
P. mirabilis	1	—	+	+p	+s	+	+	—
Ps. aeruginosa	4	—	+	—	+s	+	—	—
Aerobacter	1	—	—	—	—	+	—	—
Paracolon Aerobacter	4	—	—	—	—	+	—	—
Staph. aureus	3	—	—	+p	—	—	—	—
	3	—	—	+p	—	+	—	—
	5	—	—	—	—	+	—	—
Hemolytic streptococcus	5	—	—	+	—	—	—	—
Enteric streptococcus	1	—	+s	—	+	+	—	—
Anaerobic streptococcus	4	—	+d	—	+d	+d	+	—
Anaerobic streptococcus	1	—	—	+	—	—	+	+
Staph. albus	1	—	—	—	—	+	—	—
Staphylococcus	1	—	—	—	—	+	—	—
Anaerobic micrococcus	2	—	—	—	—	+	—	—
	1	—	—	—	—	—	+	+
	2	—	—	—	—	—	+	—
	2	—	—	—	—	—	—	+
Anaerobic actinomyces	4	—	—	—	—	+	+	—

Key: +d, delayed reaction, three or more days; 0, no test; ±, variable reactions; +s, slight to weak reactions, and +p, partial dissolution of clot.

---

[7] Bergey, D. H., and others: Bergey's Manual of Determinative Bacteriology, ed. 5, Baltimore, Williams & Wilkins Company, 1939.

days) and Loeffler's blood serum (twenty-one to thirty days); they liquefied gelatin (seven to twenty-one days), gave a weak to moderate hydrogen sulfide reaction (seven to fourteen days) and formed indole. However, they failed to produce fibrinolysin. One other culture caused lysis of fibrin clot and formed gas consistently in carbohydrate-free mediums. The remaining 3 cultures failed to demonstrate significant activity on fermentative, proteolytic and other test substrates. None of the 8 anaerobic streptococci conformed culturally and biochemically to the 8 anaerobic species listed by Prévot,[8] including those associated with gangrene. Topley and Wilson[9] were of the opinion that the anaerobic streptococci comprise many different groups, species and types for which there is not sufficient data at present to permit systematic classification.

Cocci other than staphylococci and streptococci were designated as micrococci and constituted a heterogeneous group. Diplococci, tetrads and cocci arranged singly or in clumps represented the arrangement of types. Thirty-six cultures were recovered from 21 wounds, including 2 clean ones. Preliminary studies failed to classify these organisms. Twenty-one cultures from 19 wounds were obligatory anaerobes, 14 cultures from 13 of either the same or different wounds were microaerophilic and 1 culture was aerobic. None of the cultures was hemolytic, and their biochemical reactions were limited and variable. Eleven of the 14 microaerophilic micrococci failed to grow in the 1 per cent Bacto-tryptose broth with 0.3 per cent beef extract and 0.5 per cent sodium chloride, but by increasing the Bacto-tryptose concentration to 5 per cent, moderate growth was obtained in forty-eight hours with all but 2 cultures. All the microaerophiles were placed with the commensals, but 7 of the anaerobic micrococci exhibited some degree of proteolytic reaction (table 2). Technically, the micrococci had a high nuisance value and were often responsible for repeated platings to purify clostridiums.

Twenty-five cultures of gram-negative nonsporulating aerobic bacteria were isolated from 20 wounds including 3 clean wounds. The majority proved to be members of the family Enterobacteriaceae[7] and were identified as follows: 8 strains of Aerobacter, 2 Escherichia, 4 paracolon Aerobacter,[10] 2 paracolon Escherichia and 2 Proteus. Four cultures were Pseudomonas aeruginosa. Three unidentified cultures previously encountered in wound infections[11] were the same culturally and biochemically. Dark pink convex colonies with their margin entirely to slightly irregular were formed on eosin–methylene blue agar, and a mucoid-like growth occurred on nutrient agar. They were nonmotile. Glucose was fermented with acid production in twenty-four hours, but lactose, sucrose, salicin, maltose and mannitol were not fermented after two weeks. Indole and Voges-Proskauer tests were negative, but growth occurred on citrate agar. They were not proteolytic. Stuart and Van Stratum[12] reported the isolation from infants of unidentified organisms which fit this description except for delayed lactose fermentation. Proteus and Pseudomonas were the most active proteolytic bacteria of this group. Next to certain species of Clostridium the most actively proteolytic type encountered was Proteus. Among the coliform and related bacteria 1 strain of Aerobacter and 4 of paracolon Aerobacter were placed in the proteolytic group because they liquefied gelatin.

Three strains of the nonsporulating anaerobe Bacteroides melaninogenicum were isolated from infected wounds. In serum broth they produced an irregular flocculation accompanied by a strong odor of hydrogen sulfide, while in blood broth there was pronounced darkening with loss of opacity. The 3 strains were difficult to maintain and were lost before their proteolytic reactions were studied. On the basis of their reactions in serum broth and blood broth and their described proteolytic features[13] they fell readily into the proteolytic group. It is possible that the incidence of this organism is low since its presence was suspicious in smear from several other specimens (characteristic gram-negative bipolar staining rods in preliminary enrichment broth smears of infected material) and it required prolonged cultivation for isolation.[4]

Species of Clostridium comprised the most numerous group recovered. Fifty-eight cultures representing 8 species and 9 unidentified types were recovered from 26 of the 36 wounds, an incidence of 72.2 per cent. Ten species or types, including toxigenic types, were isolated from 5 of the 9 clean wounds. Toxigenic species included 7 Clostridium perfringens, 2 Clostridium novyi and 2 Clostridium septicum strains and 1 type which resembled but could not be identified definitely as Clostridium fallax. Except for Cl. perfringens their toxicity was demonstrated by guinea pig inoculations. All the Cl. perfringens strains, however, were positive for alpha toxin as determined by a modified Nagler reaction.[14] Twenty-two Clostridium sporogenes were isolated, an incidence of 61.1 per cent from all wounds and 84.6 per cent from the wounds from which types of Clostridium were recovered. The remaining species included 1 Clostridium bifermentans, 1 Clostridium sphenoides, 6 Clostridium tertium and 8 Clostridium putrificum and related types.[4]

The discrepancies found among given characteristics of species of Clostridium and the occurrence of unidentified types in this and other recent studies[15] reflect some problems of this group. The described characteristics of Clostridium sordelli by Reed and Orr[16] are identical to those of Cl. bifermentans except for hemolysis and toxin production by the former. Bergey's Manual,[7] on the other hand, describes Cl. bifermentans as hemolytic and considers "Bacillus sordelli" a toxic strain of Cl. bifermentans. The single strain of Cl. bifermentans isolated in this study was strongly hemolytic but failed to prove toxic to guinea pigs. One culture was identical with Clostridium capitovalis but failed to ferment galactose or to digest Loeffler's blood serum, and it produced indole.[17] Two strains of Cl. novyi did not produce changes in milk of iron, although reactions of digestion and late coagulation have been observed for this species.[18] Both strains exhibited definite double zone hemolysis, a feature ascribed only to Cl. perfringens of the gas gangrene bacilli. Except for variable salicin fermentation and failure to reduce nitrate, the unidentified toxigenic type was identical to Cl. fallax. Cl. tertium is described as microaerophilic, but 4 of the 6 cultures with the characteristics of this species were anaerobic. These biochemical and metabolic discrepancies may represent strain differences among species of Clostridium, similar to those described in other bacterial groups and types. By nature Clostridium appears to be a complex group. Only when a vast number of stock cultures and freshly isolated cultures are examined under both uniform and controlled variations of test substrates may some of their discordant features be settled. The occurrence of unidentified types in wounds is not surprising in view of the large number of species and types already described.[8]

---

[8] Prévot, A. R.: Manual de classification et détermination des bactéries anaerobies, Paris, Masson & Cie, 1940.

[9] Topley, W. W. C., and Wilson, G. S.: The Principles of Bacteriology and Immunity, ed. 2, Baltimore, Williams & Wilkins Company, 1936.

[10] Stuart, C. A.; Wheeler, K. M.; Rustigian, R., and Zimmerman, A.: The Biochemical and Antigenic Relationships of the Paracolon Bacteria, J. Bact. **45**: 101, 1943.

[11] Lyons, C.: Penicillin Therapy of Surgical Infections, J. A. M. A. **123**: 1007 (Dec. 18) 1943.

[12] Stuart, C. A., and Van Stratum, E.: Antigenic Relationships of Coliform and Related Bacteria Isolated from Infants in Nurseries of Two Institutions, J. Pediat. **26**: 464, 1945.

[13] Weinberg.[4] Prévot.[8]

[14] Thompson, S.: Personal communication to the authors.

[15] Smith, L. D., and George, R. L.: Anaerobic Bacterial Flora of Clostridial Myositis, J. Bact. **51**: 271, 1946. MacLennan.[1]

[16] Reed, G. B., and Orr, J. H.: Rapid Identification of Gas Gangrene Anaerobes, War Med. **1**: 493 (July) 1941.

[17] Prévot.[8] Reed and Orr.[16]

The distribution of species of Clostridium in each of the 26 cases was represented as follows: 5 types from 1 case, 4 from 2 cases, 3 from 7 cases, 2 from 8 cases and 1 from 8 cases. Only 2 of the 10 wounds from which toxigenic types of Clostridium were isolated were diagnosed as or gave a past history of clostridial myositis. These observations support the evidence that toxigenic Clostridium may be present in wounds without eliciting myositis. Furthermore, Cl. perfringens, Cl. novyi and the unidentified type were found in infected wounds seventeen to forty-five days after the time of injury. Two strains of Cl. perfringens and both strains of Cl. septicum were isolated from 3 clean wounds, all of which were under penicillin therapy.

All but 11 of the 58 cultures of Clostridium exhibited some degree of proteolytic activity varying from active digestion of all test substrates by Cl. sporogenes to only fibrinolysis by the unidentified toxigenic type (table 2). The 11 negative cultures, mostly formers of terminal spores, produced hydrogen sulfide from a lead acetate medium. In addition, 3 of the 6 strains of Cl. tertium formed a slight amount of gas from proteose peptone broth. With some variation in the rate of activity the 22 strains of Cl. sporogenes actively digested cooked meat, casein, Loeffler's blood serum, lysed fibrin clot and liquefied gelatin and formed abundant hydrogen sulfide and comparatively large amounts of gas from proteose peptone broth. Weinberg, Nativelle and Prévot [4] have described Cl. sporogenes as the organism par excellence of putrefaction. Its vigorous decomposition of varied protein substrates and its overall active metabolism are so striking that along with its relatively high frequency in wounds, as observed in this and other studies,[15] it may well function as one of the most efficient wound pathogens among the proteolytic bacteria. The decided ability of Cl. sporogenes to produce gas from proteins and glucose may indicate, under appropriate conditions, its role in the formation of gas in infected wounds. In 2 suppurative wounds with gas, Cl. sporogenes was the only active gas-forming member isolated. Further studies of this species appear necessary.

A majority of the 8 cultures of Cl. putrificum attacked most if not all the protein substrates, although their activity was not as rapid or pronounced as that of Cl. sporogenes. One culture actively digested cooked meat in five days and 5 cultures required twenty-one to thirty days for partial digestion of this medium. All 8 cultures liquefied gelatin in from twenty-four to forty-eight hours; casein was digested in from two to seven days, and 7 cultures gave positive reactions on Loeffler's blood serum after from two to three weeks. Four cultures lysed fibrin clot after overnight incubation. All of the bacilli which cause gas gangrene exhibited some proteolytic activity (table 2). Positive but inconsistent results were obtained for fibrinolysis. All strains of Cl. novyi and Cl. septicum and the unidentified type gave positive reactions on one occasion and negative reactions on others. Similar results were obtained with 3 of the 7 strains of Cl. perfringens, while 4 strains were consistently negative.

The remaining bacteria isolated were 4 anaerobic Actinomyces, 3 aerobic spore-forming bacilli, 6 aerobic and 2 anaerobic diphtheroids, 1 alpha hemolytic streptococcus and 2 unidentified aerobic nonsporulating gram-positive rods. The Actinomyces cultures were proteolytic and appeared to be identical. The aerobic spore-forming bacilli diphtheroids, alpha hemolytic streptococcus and aerobic gram-positive rods were not further studied and were arbitrarily placed in the commensal group. Fusiform bacteria were seen in smear from 2 wounds but were not isolated.

COMMENT

In analyzing the functional differentiation employed for the 214 types of bacteria it is noteworthy that bacteria producing proteolytic enzymes occurred with relatively high frequency. Of 193 of the 214 isolates tested, 33.2 per cent without defined pathogenicity digested one or more of the protein substrates. This incidence is increased to 47.7 per cent when the proteolytic reactions of true pathogens are included. In addition, 8.7 per cent of the cultures which did not attack the protein substrates produced hydrogen sulfide and/or visible gas from secondary protein derivatives. The qualitative and quantitative variations of protein decomposition among the various proteolytic bacteria might signify a differential importance in relation to their activity in wounds. Obviously there is no comparison between the proteolytic activity of such organisms as Cl. sporogenes and those organisms whose activity is limited to gelatin liquefaction, such as Aerobacter. However, the proteolytic bacteria were mixed in 22 of the 32 wounds from which they were isolated; there were 9 cases with 2 types and 13 cases with 3 to 5 types. Although sluggishly proteolytic bacteria such as Cl. putrificum may not seem as important as more active types, their proteolytic degradation in vivo could be more active than that suggested by their in vitro metabolism. Their proteolytic activity might be enhanced in association with certain other bacteria. For example, Sturges and Rettger [19] found that the presence of Staph. aureus accelerated considerably the decomposition of protein by B. putrificus.

The defined pathogenic features of Staph. aureus, beta hemolytic streptococci and toxigenic strains of Clostridium should not mask the study of their proteolytic activities. Although the coagulase test is considered indicative of the pathogenicity of Staph. aureus, the liquefaction of gelatin and fibrinolysis by some strains of this species may be important characteristics in relation to their activity in wounds. Of the 3 coagulase-negative strains, 1 liquefied gelatin and was fibrinolytic and 2 were fibrinolytic. The beta hemolytic streptococci were limited to fibrinolysis in the present study. But Christensen[20] reported that a mixture of streptococcic fibrinolysin and the lysin factor of serum caused active proteolysis of casein, gelatin and hemoglobin. The fibrinolysis of other bacteria should be studied to determine whether the active digestion of various proteins occurs under the same conditions. Differences in proteolytic activity among strains, as illustrated by Staph. aureus and other bacteria, should always be kept in mind. The 2 strains of Cl. novyi liquefied gelatin but did not digest milk of iron, although the latter reaction has been described as rapid for this organism.[16] There is no evidence for the action mechanism to account for the local necrotizing action of proteolytic bacteria through the septic decomposition of dead tissue. It is known that bacteria, particularly anaerobic bacilli, are capable of forming as protein degradation products such substances as cadaverine, skatole and indole, which have been associated with systemic toxicity, and others, such as the amine of tyrosine, which cause decided physiologic action in an extremely small concentration.

---

[18] Topley and Wilson.[9] Reed and Orr.[16]

[19] Sturges, W. S., and Rettger, L. F.: Methods for the Isolation and Cultivation of Bacillus Putrificus and Other Obligate Anaerobes, J. Bact. 4: 171, 1919.

It is more difficult to analyze definitively the wound activity of the various bacteria considered as wound commensals. With further studies some members of this group, such as the anaerobic or undifferentiated streptococci, may be incriminated; but at present there is a lack of evidence that they are involved primarily in the infection of wounds. Almost without exception commensals, including enteric and undifferentiated streptococci, microaerophilic and anaerobic micrococci, a nonpigmented strain of Staphylococcus and aerobic spore-forming bacilli, were the only types isolated from 4 clean wounds which healed without infection[4] in the absence of penicillin therapy. Such bacteria may survive and grow in wound exudates and also in the crevices of traumatized injuries until the healing processes have progressed sufficiently to eliminate them. The hardy characteristics of Streptococcus faecalis might suggest a high degree of adaptability in a wound environment. It is possible that at least some commensals may be of importance through synergistic relationships with the true pathogens and proteolytic bacteria. The synergistic relationship between an anaerobic or microaerophilic streptococcus and a hemolytic Staph. aureus causing postoperative synergistic gangrene has been described.[21] Moreover, the ability of some members to play an intermediate role in the decomposition of dead tissue cannot be overlooked. Amino acid metabolism such as the decarboxylation of tyrosine by Str. faecalis, the breakdown of tryptophan to indole by Escherichia coli and similar reactions by other bacteria placed in the group may contribute to the ultimate decomposition of devitalized tissue.

The combination of the various bacteria in each of the 36 wounds has been reported previously.[2] In the final analysis the interplay of metabolic activities of the true pathogens, the proteolytic bacteria and those regarded as wound commensals may be of major importance in the development of infection. Although the etiologic factors of clinical entities such as myositis and acute cellulitis may be fixed, synergism of concomitant bacteria may affect their degree of infectivity. Updyke and Frobisher[22] produced evidence supporting the view that hemolytic streptococci of group B may act synergistically with diphtheria bacilli to cause malignant diphtheria in certain cases of the disease. MacLennan[1] noted a greater fatality rate in gas gangrene due to mixed infections of toxigenic strains of Clostridium than in that due to infection by a single species. In addition he obtained some evidence to support clinical and experimental observations that proteolytic species of Clostridium may have an adjuvant action in gas gangrene.

The combined proteolytic reactions of several bacteria might be much more effective in causing septic decomposition of dead tissue than their individual reactions. Local gas in infected wounds may be ascribed to any of the vigorous saccharolytic or proteolytic enzymes of such organisms as Cl. perfringens, Clostridium aerofetidum and Cl. sporogenes. Such infections might be more pronounced with a mixture of bacteria capable of producing active gas-forming enzymes; indeed, even organisms normally regarded as saprophytes, such as Cl. tertium and Cl. sphenoides with their energetic saccharolytic powers, might contribute to the development and occurrence of gas in infected wounds.

This bacteriologic study was a time-consuming task beyond routine investigation. Primary anaerobic platings were incubated for from seven to fourteen days to enhance the isolation of slow growing bacteria such as B. melaninogenicum. Difficulties in the isolation of certain species of Clostridium from mixed cultures have been long recognized. Smith[15] reported that study of a single specimen of invaded muscle may not be adequate to reveal the presence of all "anaerobic bacteria." The establishment of pure cultures of the different bacteria was a tedious task because of spreading growth by Proteus and certain species of Clostridium even on plates with a 3 per cent agar medium and dry surfaces. On occasion even compact and well isolated colonies of Clostridium were mixed cultures. All the Clostridium cultures were replated as many as two to four times to make certain their purity. Animal inoculations prolonged the study of toxigenic clostridiums and those resembling toxin producers, i. e. Clostridium tetani. Delayed biochemical reactions such as slow proteolysis of some substrates by cultures of Cl. putrificum and certain anaerobic streptococci made their complete study incompatible with routine investigation. As stated previously, some of the bacteria, including Clostridium, undifferentiated and anaerobic streptococci and other cocci, could not be systematically classified. At present these facts and results eliminate rapid technics of isolation and identification of the mixed floras of war wounds. The submission of infected wound material to the laboratory for bacteriologic study appears to be impractical for routine diagnostic examination except in those instances in which it may be desirable to determine the presence or absence of specific etiologic agents.

Thus lines of demarcation of infection of wounds appear to be more practical clinically than bacteriologically. With the presence of certain bacteria the potentiality of various clinical entities exists, but the course, severity and final manifestation may in part be a function of the whole flora. To quote Waksman:[23]

---

[20] Christensen, R. L.: The Mechanism of Streptococcal Fibrinolysis, J. Bact. 47: 471, 1944.

[21] Meleney, F. L.: Bacterial Synergism in Disease Processes, Ann. Surg. 94: 961, 1931.

[22] Updyke, E., and Frobisher, N.: Group B Streptococci and Malignant Diphtheria, J. Bact. 47: 474, 1944.

[23] Waksman, S. A.: The Microbe as a Biologic System, J. Bact. 45: 1, 1943.

"The physiology of an organism in pure cultures is so [illegible] from that of the same organism in a mixed population that one is often astonished to discover that an old friend, known and recognized by its specific reactions in given media, behaves quite differently in the presence of other organisms."

The sensitivities of the gram-positive bacteria to penicillin, the technics employed and the therapeutic effectiveness of penicillin have been described in the technical[3] and clinical[2] counterparts of this report. The use of penicillin against the polymicrobial infections emphasized its relative bacteriologic relationships. Since variation of sensitivity exists among strains and among species of susceptible bacteria, the efficacy of penicillin is dependent on the establishment of sufficient concentration levels in the blood in relation to the known in vitro sensitivity of a given organism. The fact that the strains of Streptococcus pyogenes, Cl. septicum and Cl. novyi were inhibited by 0.025 unit of penicillin per cc. of broth, the 7 strains of Cl. perfringens by 0.25 to 0.5 unit per cc. of broth and the 22 strains of Cl. sporogenes by 0.25 to 2.0 units per cc. of broth illustrates that with mixed infection of a wound the effective concentration of the drug may be determined by one of several pathogens present. Some strains of pathogenic species may tolerate amounts of penicillin beyond the present average blood levels,[24] as depicted by 2 strains of Staph. aureus which grew in 2.0 units per cc. of broth and the 4 strains of Cl. sporogenes which grew in 1.0 unit of the drug. Only when penicillin is chemically defined will it be possible to consider its effect in more absolute bacteriologic and clinical terms. It may be of some significance that both gradual and abrupt diminution of growth occurred with several species of bacteria in the various concentrations of the drug employed in testing their susceptibilities. For example, 4 of the 7 strains of Cl. perfringens revealed a decrease in growth two to three concentrations below the inhibitory concentration, while with the remaining 3 strains this decrease occurred one concentration below the inhibitory amount. In contrast 8 strains of Cl. sporogenes attained a heavy growth in concentrations up to the inhibiting amount, and the remaining 14 strains were partially inhibited one concentration below the inhibitory point. Any partial effect in vitro may be significant in vivo because with any antibiotic the normal defense mechanism still plays an important role in combating infections. At the same time, it is necessary to consider that limitation of dosages at critical levels may be a dangerous practice. Numerous investigators have demonstrated that penicillin-sensitive bacteria can be adapted to resist many times the original inhibitory concentration of the drug. With suboptimal concentrations in vivo the organism may be retarded in growth, but under certain conditions the tissue may not completely remove the infectious agent or may be relatively slow in its elimination. The dormant presence of the agent and its subsequent passage to another person might constitute its first phase of in vivo penicillin adaptation.

Lyons[11] has pointed out that wound infections are not controlled adequately without complete débridement and that devitalized tissues, such as muscle and sequestra, are not sterilized by penicillin. On the contrary, the culture of dead tissue removed by surgical methods following penicillin therapy may not infrequently duplicate the flora of initial cultures taken prior to the use of penicillin. According to Himes and White,[25] penicillin is not appreciably affected by serum, blood, pus, tissue extracts and autolysates, amino acids, carbohydrates, phospholipids and purines. Inactivation of penicillin by organisms such as coliform bacteria, aerobic spore-forming bacteria and certain species of Shigella presumably may occur through an enzyme.[26]

ABSTRACT OF DISCUSSION

ON PAPERS OF DR. LYONS, DR. STEWART, DR. SNYDER AND DRS. RUSTIGIAN AND CIPRIANI

Dr. Hall G. Holder, San Diego, Calif.: It is generally recognized that no known chemotherapeutic agent will render open wounds sterile. The only sterile wound is the successfully closed wound. Thus the continued emphasis on delayed wound closure as early as it can be successfully accomplished. It has been possible to materially reduce the period of preparation of these wounds and obtain primary union on delayed suture by application of a mixture of urea, or carbamide, and one of the sulfonamide compounds. The rationale for employing this mixture is: (1) The known lytic action of urea on devitalized tissue without appreciable damage to normal tissue cells or the physiologic processes of wound repair. (2) Urea, because of its decided solvent action, was found to greatly increase the solubility of the sulfonamide compounds. Sulfanilamide was employed in the mixture because of its greater solubility. The proportions used were urea 87 per cent and sulfanilamide 13 per cent. The addition of 5 per cent pectin to this mixture materially reduces any cutaneous irritation resulting from the lytic action of urea on necrotic tissue. Infected wounds cannot be sterilized by any known antiseptic agent. It is more important to provide local tissue immunity with the removal of deterrents to wound healing by aiding the sequestration of necrotic tissue, rich in bacteria, by mechanical or chemical débridement and by adequate surgical drainage. This has been accomplished most expeditiously by the application of the urea mixture to suppurating wounds, thus materially reducing the time necessary to render them free from visible infections and ready for successful delayed closure. This in turn reduced to a minimum fibrosis and soft tissue dysfunction.

Dr. Emile Holman, San Francisco: I saw many wounds that had been treated with sulfanilamide at the front, and I am sure that many were not treated thoroughly. They were dusted superficially without any attempt being made to place the drug into the depths of the wound. In the last war it was found that modified Dakin's solution had to be introduced into all parts of the wound to be effective. I am sure that this is true of the local treatment with sulfanilamide. It must go into every nook and cranny of the wound.

Dr. Everett I. Evans, Richmond, Va.: If physicians had given more attention to the observation of clinical material and less to certain observations in the experimental laboratory, they never would have fallen for the idea that plasma is the agent of choice for the treatment of any type of true surgical shock. I think the general figure of about 40 to 50 per cent loss of whole blood in casualties, civilian and military, must be accepted, and that simply means what is brought out by Dr. Snyder, 2,000 or 3,000 cc. of whole blood replacement. I wince at the thought of any large scale surgical operation being contemplated or carried out without the preparation of at least six or eight transfusions. One practical point mentioned by Dr. Snyder is very important. It is the matter of recognizing concealed, continuing blood loss. One of the sorriest things I ever stated in the literature was how convinced I was of the importance of the local application of sulfonamides in burns. I wish it had never been put in print.

---

[24] Ory, E. M.; Meads, M.; Brown, B.; Wilcox, C., and Finland, M.: Penicillin Levels in Serum and in Some Body Fluids During Systemic and Local Therapy, J. Lab. & Clin. Med. **30**: 809, 1945.

[25] Himes, A. T., and White, J. W.: Penicillin Inactivators, J. Bact. **47**: 426, 1944.

[26] Bondi, A., and Dietz, C. C.: Destruction of Penicillin by Bacteria, J. Bact. **47**: 426, 1944. Woodruff, H. S., and Foster, J. W.: Bacterial Penicillinase, ibid. **47**: 425, 1944.

Col. Michael E. DeBakey, Medical Corps, United States Army: The observations I shall make in connection with this group of papers are based on rather broad statistical data collected in the Surgeon General's Office from various theaters of operation. In the first months of combat in World War II the incidence of gas gangrene was alarmingly high, but it became progressively lower as the war progressed and eventually was almost negligible. Plotted against time, it shows a fairly characteristic curve in all theaters, falling from an initial high of 3 per cent in some theaters to a final incidence of less than a tenth of 1 per cent, regardless of season or terrain or nutritional status or any of the other factors originally advanced to explain it. Experiences in the Third and Fifth Armies were characteristic; in the Fifth Army, for instance, in March 1945 there were only 9 cases of gas gangrene in the last 15,000 wounded. During the early days of the war when the incidence was highest, chemotherapy was employed religiously, both locally and systemically. Toward the end of combat, local chemotherapy was used little and in some armies was prohibited entirely. Penicillin, by that time in general use, had been employed in some campaigns and not in others, but whether or not it was used did not perceptibly affect the incidence of gas gangrene. The most rational explanation for the falling curve was everywhere the same; as the experience of surgeons increased, the surgical care of the wounded improved. Experiences in other types of infection support this theory, although statistical data to support it are not available. My second observation concerns the use of the new chemotherapeutic agent streptomycin and is based on experience derived from the Army streptomycin program. The studies included 179 cases of infected wounds, all combat-incurred, all with polymicrobial flora and most of them associated with chronic osteitis and fibrosis. Streptomycin was used in various systemic and topical combinations as part of the surgical management. Complete sterilization of the wound was rarely achieved, and only 40 per cent of the patients were regarded as improved; the remaining 60 per cent were definitely not benefited. The significant fact in the analysis is that almost without exception improvement was coincident with adequate wound revision, while the patients who failed to improve all seem to have had inadequate surgical intervention. The assumption seems justified that streptomycin deserves no more absolute reliance in the management of infected wounds than do other agents in the same or similar categories. Chemotherapy is no more than an adjunct in the surgical management of wounds, and the secret of good results is adherence to the fundamental surgical principles which have changed little since they were first advanced many years ago.

Dr. Frederick M. Allen, New York: Precise experiments distinguish the entities of hemorrhage, shock and infection, the fortuitous mixtures of which in clinical cases conduce to loose definitions and confused methods. Also the errors emanating from the Shock Commission of World War I were perpetuated disastrously in the recent war. Lives were lost in learning that plasma is unequal to whole blood; but though plasma is superior to isotonic solution of sodium chloride for hemorrhage, mention has not been made of the great life-saving value of isotonic solution of sodium chloride when blood or plasma is lacking. Shock must be conceived of as tissue injury which results in two processes, namely tissue edema and toxin formation. Any defense of the anachronistic plasma treatment by Army officers should be addressed to their scientific advisors whose amended instructions, issued after the German surrender, accepted the fact which I first demonstrated in 1939, that the predominant need is for large volumes of isotonic solution of sodium chloride to supply the demand of the tissues for sodium and water. The toxic factor in shock can be combated by only one method known at present, namely the reduction of temperature, while warmth is demonstrably fatal. Military surgery is said to follow the same principles as civil surgery. Local refrigeration should therefore be particularly demanded in war, when there are facilities in winter campaigns or in equipped hospitals or with an easily portable apparatus which was offered but not accepted. Burns were a numerous and fatal class of injuries, not treated with either salt solution or reduced temperature. The warming of shocked patients enlarges this list of wrong methods whose use unquestionably cost many lives and limbs. They are justly chargeable not to harassed Army officers but to their official advisors. If the value of the new methods for the treatment of war wounds is denied, it is remarkable that the Navy has reported benefits, and I await more complete publication of the extensive use of refrigeration in the South Pacific campaigns.

Dr. John D. Stewart, Buffalo: The problems of trauma encountered by the military surgeon are fundamentally the same as the problems of trauma met in civilian surgical practice. The civilian experience differs chiefly in intensity from that of the military surgeon. The causes of traumatic shock, its physiologic disturbances, the problems of wound management, the control of wound infection and the metabolic disturbances following a serious wound are no different in the battle casualty than in the seriously wounded civilian. There is a general tendency to disassociate experiences in wartime from those in civilian practice—a tendency which leads to a good deal of error and retards progress. I would like to make a plea that the surgeon take a comprehensive view of the severely wounded person. The surgeon must be concerned not only with the management of traumatic shock, the decision when to operate and what operation is to be performed, but he must be concerned also with the problems of after-care. A phrase has come into use in connection with military surgery, namely, the continuity of management of the wounded, which conveys a world of meaning. To delegate part of the treatment of the patient to someone else and to wait until notified that the patient is ready for operation, or to delegate the problems of after-care leads to less than optimal results. Here as elsewhere in surgical practice the direct, personal and continuous care of his patient is a responsibility which the well informed and able surgeon will cherish.

Dr. Champ Lyons, New Orleans: Dr. Holman has requested that we make this a little bit less of a "milk toast" affair, and he has leveled a fairly serious charge at me, that I am quoting ex cathedra evidence that local sulfonamide therapy is of no value. I knew the Navy was using local sulfonamide therapy; I read all about it in *Collier's* magazine. In the *Annals of Surgery*, over the past three years, there have been a long series of reports stemming from the National Research Council, an organization composed of a group that tried desperately hard to evaluate the role of chemotherapy. This was not strictly experimental work. It was controlled clinical observation. The conclusion, on several thousands of cases, was that the incidence of wound suppuration was increased by the local application of sulfonamide compounds. I think that is as close as one can come at the moment to a correct appraisal of the position of topical therapy.

Dr. Frank B. Berry, New York: I think all of us, mindful of World War I, believed that when we entered the northern European theater the incidence of clostridial infection would rise. Colonel deBakey put his finger on the reason why it did not rise. In this war we were blessed with a large group of superbly trained surgeons, the product of our residency system. Some had already had experience in warfare, some had had experience in warfare and civilian casualty surgical practice (those who were in England), and the newly arrived learned promptly. All were keenly aware of the indications for surgical intervention and of the necessity for the continuous treatment that Dr. Stewart has just mentioned. In our own army we required a monthly report on the incidence of clostridial infection and the names of the soldiers. Much to my amazement one month, in came a report of 7 cases occurring in a clearing station, with the soldiers discharged to duty with wet dressings. I investigated and found that this zeal on the part of the officer was due to the dissemination of information on clostridial infection. He had never seen a case in his life and was so afraid he was going to miss something that he was mistakenly reporting simple cellulitis of the feet as clostridial infection. Everybody was aware of the hazards and dangers of infection. I think the foremost reasons for the good results were this widespread dispersion of knowledge and the great number of good surgeons.

SUBTROCHANTERIC OSTEOTOMY IN POLIOMYELITIS

C. E. IRWIN, M.D.
Warm Springs, Ga.

Subtrochanteric osteotomy is a useful procedure in at least two conditions or deformities which may result from an attack of poliomyelitis: first, uncorrectable fixed pelvic obliquity, the obliquities which cannot be corrected by usual Soutter fasciotomies in combination with well leg traction apparatus and those for which Lowman's fascial transplant and Mayer's fascial stripping are ineffective; second, certain cases of severe gluteus medius weakness when it occurs on one side.

Before entering into the discussion of the faulty body mechanics in the presence of the two conditions mentioned, let us briefly review the action of the hip abductors and lateral trunk muscles in a normal individual under conditions of weight bearing.

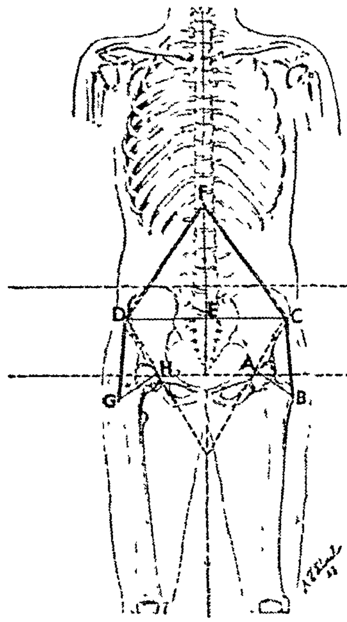


Fig. 1

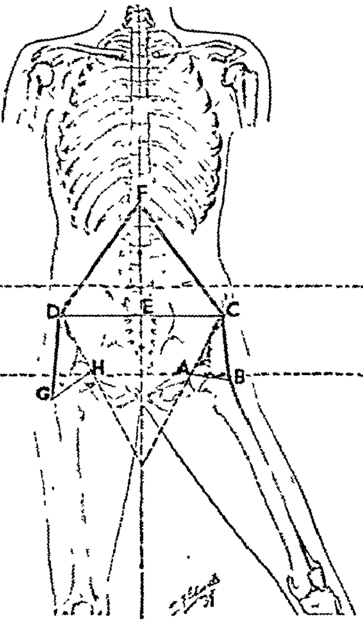


Fig. 2

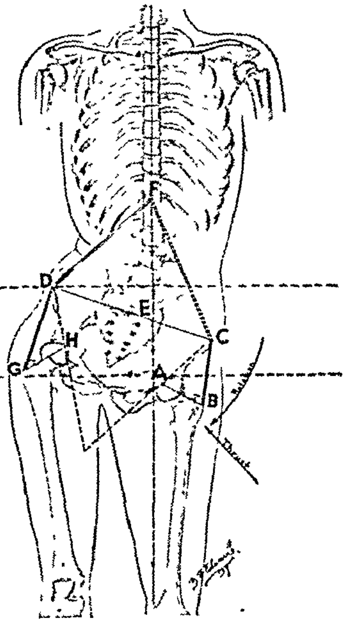


Fig. 3

Fig. 1.—A balanced skeleton. Notice the symmetry of the triangles above and below the iliac crests, the sides of which represent the lateral trunk and the hip abductor lever systems respectively.

Fig. 2.—A hip abduction contracture, represented by the double line *BC*. The pelvis is the fixed point from which the shortened abductors abduct the thigh. The deformity is localized.

Fig. 3.—When the abducted extremity, as shown in figure 2, swings into position for weight bearing, the femur becomes the long arm of a lever, pulling through the contracted abductors *BC* and forcing the pelvis down on the same side. In addition, a lateral thrust is transmitted through the head and the neck of the femur to the acetabulum, displacing the pelvis to the opposite side. There has been complete disruption of all lever systems and weight bearing thrusts concerned with locomotion.

Figure 1 represents a balanced skeleton in a normal person. For graphic illustration and as an aid in discussion, the affected muscle groups, the arms of the levers on which they act, together with the weight bearing thrusts, are represented by the sides of a triangle. Each triangle is made up of three components:

Below the pelvis: The double line *BC* represents the abductors of the hip. The single line *AB* corresponds to the arm of the lever through which the abductors exert their muscular effort. The broken line *AC* represents the weight thrust of the superstructure on the femoral head.

Above the pelvis: The double line *DF* represents the lateral trunk muscles. The single line *DE* indicates the arm of the lever through which the trunk muscles exert their effort. The line *FE* corresponds to the weight of the superstructure on the pelvis. Note the symmetry of the triangle above and below the pelvis in the normal balanced skeleton.

When a normal person takes a step, the pelvis is maintained at right angles to the vertical axis of the trunk by the action of the abductors pulling down on the pelvis on the weight bearing side. This effort is assisted by the lateral trunk group on the opposite side pulling up on the pelvis. The fulcrum, or pivoting point, is the femoral head on the weight bearing side. The femur on the weight bearing side is the fixed point from which the abductors pull down, and the rib cage and spine the fixed point from which the opposite lateral trunk groups pull up. The abductor lever system of the weight bearing side functions in conjunction with the lateral trunk lever system of the opposite side to keep the pelvis level when steps are being taken. The ribs and spine as the point of fixation for lateral trunk action are not as secure as is the femur as a point of fixation for the abductor muscle action. The ribs and the spine are dependent on the muscular efforts above the pelvis for fixation. For example, when the lateral trunk muscles *DF* elevate the pelvis, the spine is dependent on the lateral trunk muscles *FC* for counterfixation, and the lateral trunk muscles *FC* are, in turn, dependent on the hip abductors *BC* for their counterfixation. The femur on the weight bearing side then is ultimately the fixed point for this entire coordinated muscular function.

Any alteration in the strength of the muscles involved in this series of dependent or interdependent muscular efforts will disrupt the normal lever system and weight bearing thrust when a person takes a step. These facts will be referred to again in the discussion of severe gluteus medius weakness when it is present on one side.

From the Warm Springs Foundation.

Read before the Section on Orthopedic Surgery at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

DEVELOPMENT OF FIXED PELVIC OBLIQUITY

To emphasize the rationale of subtrochanteric osteotomy as a procedure to lessen the disability caused by fixed pelvic obliquity, it is well to describe the manner in which this deformity develops and to point out the faulty mechanics in its presence.

Having observed its formation from the earliest manifestations to the stage of final fixation with skeletal changes, I feel that the majority of them are initiated by contractures below the iliac crests and that few originate above this level as a result of inequality in the strength of the abdominal and lateral trunk muscle groups. There is only one type of true fixed pelvic obliquity. This type is present when the pelvis is held in a fixed oblique position by contractures both above and below the pelvis. If the pelvis is in an oblique position when there are no contractures below the iliac crests, its position is more properly classified as a scoliotic pelvis. It is no more than a part of the existing scoliosis.

Figure 2 represents an abduction contracture on the left side. The pelvis is the fixed point from which the shortened muscles *BC* abduct the thigh. If the extremities remained in this position the condition would be localized and no problem of widespread importance would result. This, however, does not follow. Obviously it is impossible for a person to walk with the extremities in this position. When the abducted extremity, as shown in figure 2, is brought into position for weight bearing (fig. 3), the femur becomes the long arm of the lever to force the pelvis down on the same side. The abductor group *BC* is rigidly contracted, and as the extremity swings through an arc to occupy a weight bearing position the pelvis and lower extremities move with it as a unit. In addition to the depression of one side of the pelvis, a lateral force or thrust is transmitted through the head and neck of the femur to the acetabulum, displacing the pelvis toward the opposite side.

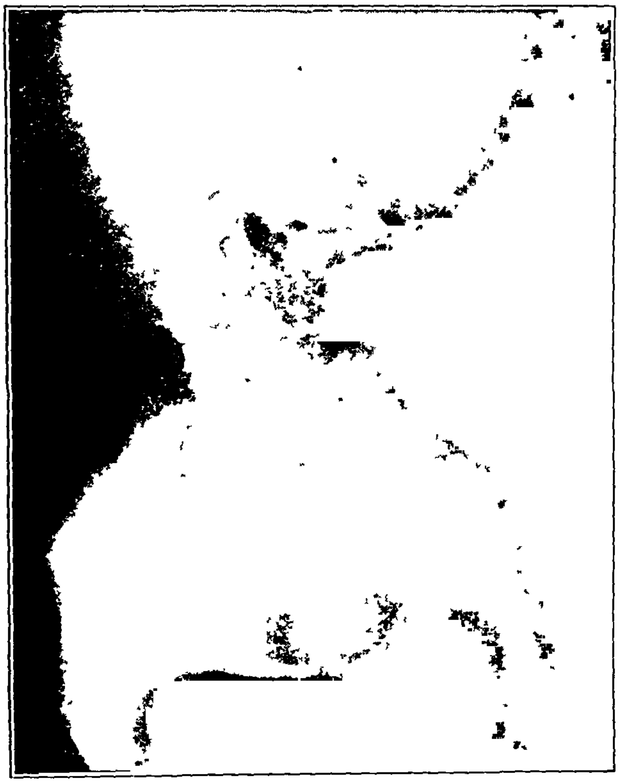


Fig. 4.—An uncorrectable fixed pelvic obliquity This patient's difficulty in walking is due to her inability to stand on the adducted extremity and get the opposite, or abducted, extremity forward to take a step

A complete change has occurred in the shape of the triangles above and below the pelvic level, with a resulting disruption of all the normal weight bearing lines and lever systems concerned in locomotion. Adaptive shortening of the lateral trunk muscles on the opposite side takes place secondarily to conform to the abnormal position of the pelvis. The pelvis is held in this oblique position by the two contralateral contractures until fixation with final skeletal changes develops.

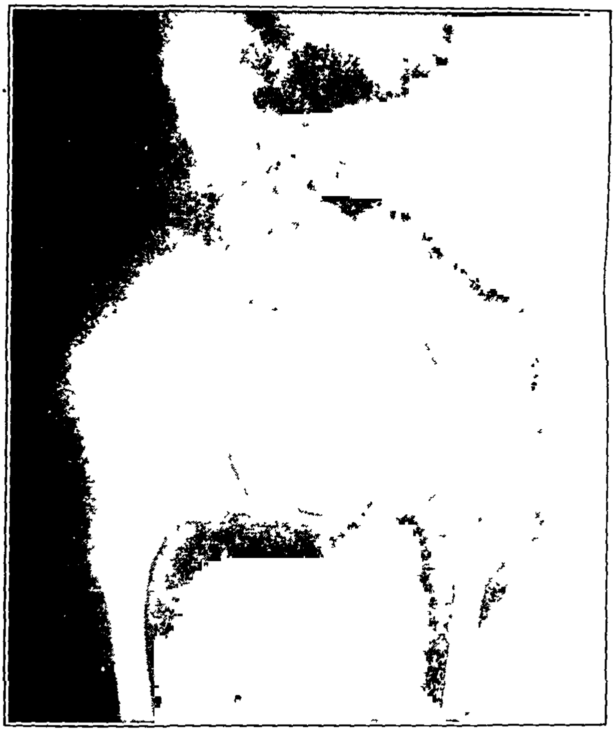


Fig 5.—Following subtrochanteric osteotomy it is possible to shift the abducted femur nearer the midline in a more efficient and useful position

The difficulty these persons have in walking is due to their inability to stand on the apparent short leg and get the opposite extremity forward to take a step. It is almost impossible for a person with this type of deformity to walk if he is wearing two long braces locked at the knee. If there is sufficient strength in the quadriceps of the apparent long side to allow the brace to be unlocked, flexing the knee will enable him to get this leg through to take a step, but the gait is rather unsightly and then has the appearance of an extremely short leg limp. The patient who is brace free on the apparent long side either widely abducts the extremity to get it forward or finally reaches the point of bearing all weight on the longer extremity, the opposite member dangling in flexion, adduction and external rotation of the hip, flexion of the knee and equinus of the foot.

At least six abnormal changes have taken place to cause this difficulty, three below the pelvis and three above the pelvis:

I. Below the Pelvis: 1. The femoral head on the side of the contracture has been depressed or lowered and shifted toward the midaxis of the body. The femoral head on the opposite side has been correspondingly elevated and displaced farther than normal away from the midline. An apparent difference in the length of the two extremities has occurred.

2. The extremity toward the side to which the pelvis has been displaced has remained in a weight bearing position. The abductors *GD* must be stretched out or elongated greater than normal length to allow this relation. Theoretically, the abductors *GD* must have elongated as much as the abductors *BD* have shortened. The efficiency or contractile strength of this muscle group, even if potentially normal, has been decreased

3. The pelvis has been rotated or displaced from its midline position under the superstructure. The line *FC*, representing the weight thrust of the upper part of the trunk, now passes almost over the femoral head of the apparent long side and at a much greater distance than normal from the femur of the elevated side. This has increased the demands of the work to be done by the abductors *DG*, which already have been weakened, having been stretched beyond their normal length. The apparent difference in the length of the two extremities plus the severe Trendelenburg when the patient is taking a step allows the pelvis on the opposite side to sag to an extremely low level.

II. Above the Pelvis: 1. The fixation point, represented by the ribs and lumbar vertebrae, from which the lateral trunk muscles *FC* normally elevate the pelvis, has been destroyed because of the abnormal elongation of the abductors *GD*.

2. The lateral trunk muscles *FC* have been stretched beyond their normal length, resulting in a decrease in their potential contractile strength.

3. The arm of the lateral trunk lever *EC*, through which this potentially weakened muscle group must now exert its effort, has been shortened.

These abnormal conditions above the pelvis make it impossible for the lateral trunk muscles *FC* to elevate the same side of the pelvis, which has already sagged to an abnormally low level

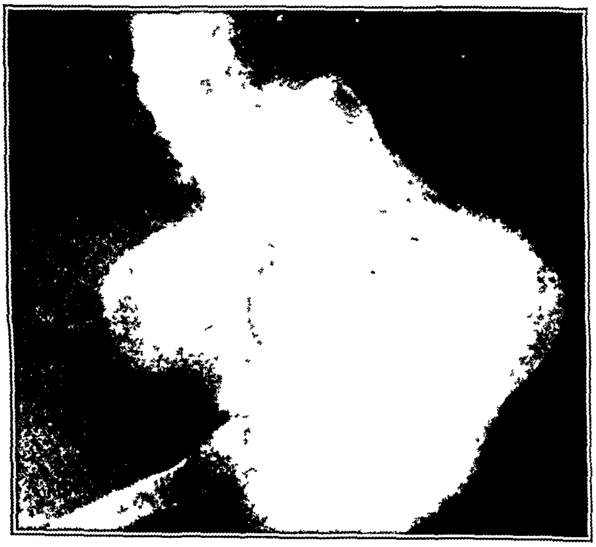


Fig 6—A severe fixed pelvic obliquity The spine has been fused with the pelvis in this position Note that the weight of the super structure falls in a plane lateral to both femoral heads

SEVERE GLUTEUS MEDIUS WEAKNESS

For all practical purposes we can say that essentially the same abnormal conditions as just described are present in severe hip abductor weakness. At the moment a person bears weight on this weak side to get the opposite extremity forward to take a step, the pelvis assumes an oblique position and the same abnormal mechanics exist above and below the pelvis. The oblique position of the pelvis, however, has been caused in a different manner. The pelvis has not been rotated and displaced from under the superstructure by contracted hip abductors It shifts away from its normal position over the center of the pelvis as the Trendelenburg becomes apparent. This shift of weight to one side helps to depress further the low side of the pelvis

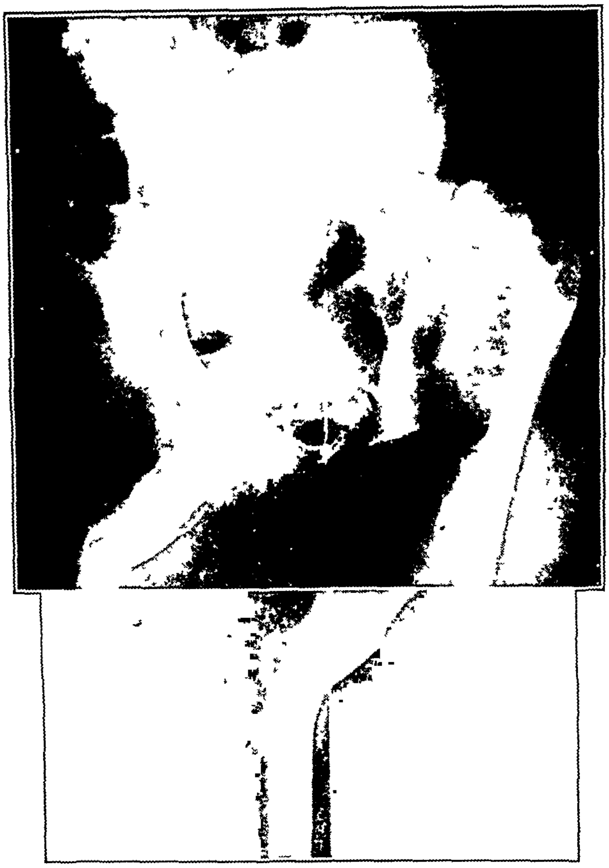


Fig 7—Osteotomy of the femur at the junction of the upper and middle thirds Anatomically the upper third of the femur is converted into femoral neck, and the shaft of the femur has been shifted into a position lateral to the weight of the superstructure

TREATMENT

Figure 4 represents an uncorrectable fixed pelvic obliquity. Since the pelvis in this case cannot be derotated or restored to a functional position under the trunk by any operative procedure, the alternative is to shift the adducted femur under the oblique pelvis nearer the center of gravity or weight thrust of the superstructure. Subtrochanteric osteotomy followed by adduction of the distal fragment permits a shifting toward the midline.

The operation does not correct the existing deformity (fig. 5). It does add actual length to an apparent short leg. The shift in the position of the femur decreases the work demanded of the abductors on the same side and the lateral trunk muscles on the opposite side. The severe Trendelenburg is decreased to the extent that these persons are made ambulatory provided they have sufficient strength in the upper extremities, shoulders and upper part of the trunk to use crutches.

Figure 6 represents the roentgenogram of an uncorrectable pelvic obliquity. Notice the extreme flexion and abduction contracture of the left hip. Unfortunately, the patient had undergone spine fusion elsewhere with the pelvis in this oblique position. The right hip is dislocated. The pelvis has rotated through an arc of almost 90 degrees. The weight thrust of the upper part of the trunk passes lateral to the left femoral head. Obviously the femur on the side of the dislocation or adducted side cannot be shifted toward the midline for more efficient weight bearing by a subtrochanteric osteotomy, as was done in the case represented in figure 5. In this second case the abducted femur was brought into a weight bearing position by an osteotomy done at the junction of the middle and upper thirds of the femoral shaft (fig. 7).

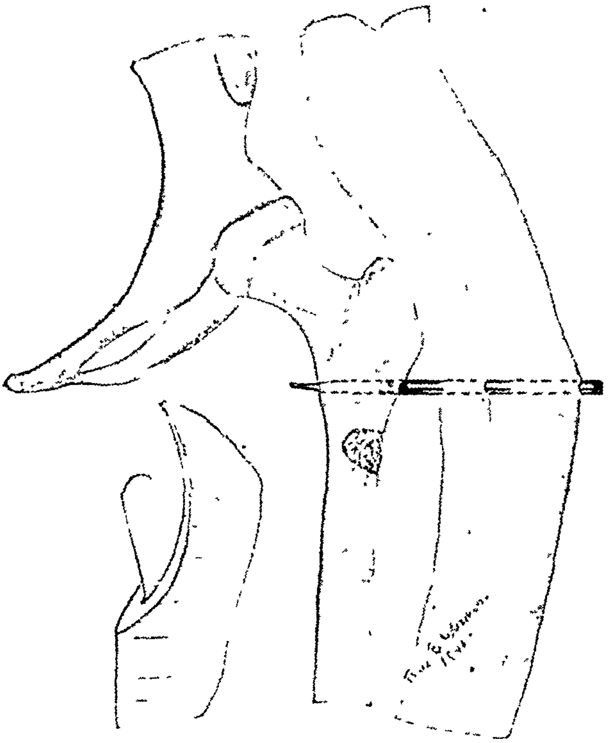


Fig. 8.—First stage of the osteotomy consists in removing a U shaped portion of bone just below the greater trochanter. The bone is cut up into chips and replaced in the recess. A Steinmann pin is inserted proximal to the osteotomy site, engaging both cortices.

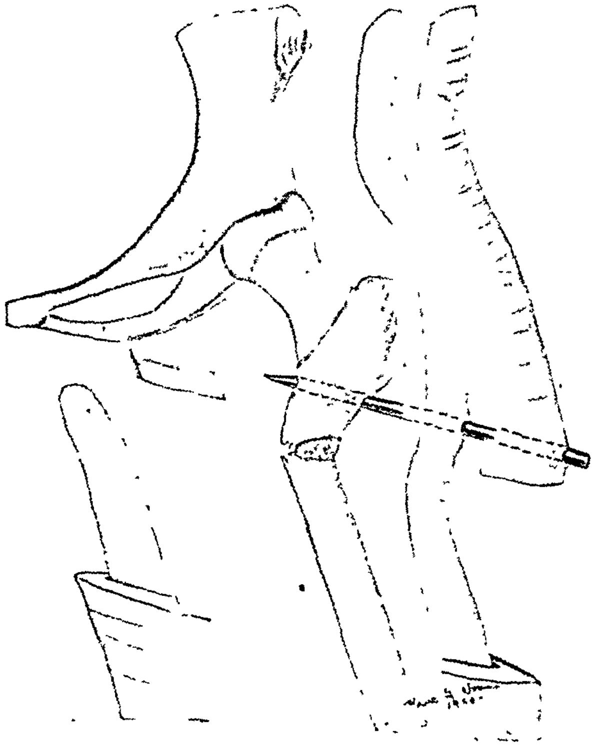


Fig. 9.—The osteotomy is completed four weeks later by manual osteoclasis. The newly formed callus around the bone shavings acts as a hinge. The proximal fragment is held in position by the Steinmann pin incorporated in the chest. At no time is there complete fracture.

The distal fragment was adducted, flexed and internally rotated. Anatomically the upper third of the femoral shaft was converted into femoral neck. The distal two thirds of the femoral shaft was shifted to the outside of the weight bearing thrust of the upper trunk. The pelvic obliquity has not been corrected.

After operation the patient could stand upright, bearing all her weight on the right lower extremity, the left being used only for balancing. She walked with two crutches, tripod fashion. She is now engaged in daily gainful occupation.

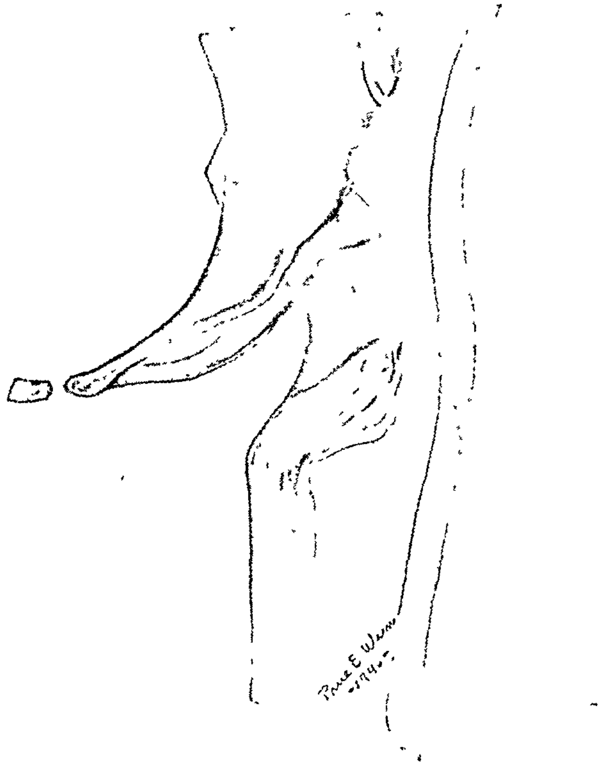


Fig. 10.—The Steinmann pin is removed at the end of six weeks. The osteotomy site is usually solidly fused at the end of eight or ten weeks.

TECHNIC OF OPERATION

One inch of the shaft of the femur in the subtrochanteric region is exposed (fig. 8). A Steinmann pin is inserted engaging both medial and lateral cortices proximal to the site of the proposed osteotomy. A U shaped portion of bone is removed from the femoral shaft including the lateral, anterior and posterior cortices. Three-eighths inch of the medial cortex is left intact. The portion of bone removed is cut up in small shavings and replaced in the recess. The incision is closed in layers. A double spica cast is applied incorporating the Steinmann pin. The osteotomy is not completed at the time of operation.

Four weeks postoperatively, with the patient under anesthesia, a wedge shaped portion of plaster is removed just below the pin with the base to the lateral side (fig. 9). The remaining medial cortex is fractured and the distal fragment abducted. Since the first procedure, sufficient callus has formed around the replaced bone shavings to prevent any displacement. At no time is there a complete separation of fragments. The osteotomy is completed by greenstick fracture, the new callus being used as a hinge. The proximal fragment is fixed by the Steinmann pin incorporated in the cast.

Six weeks postoperatively the Steinmann pin is removed and two weeks later sufficient callus has formed to allow removal of the cast. The entire procedure is completed within a period of eight weeks with practically no discomfort to the patient and a minimum amount of surgery and internal fixation (fig. 10).

COMMENT

In closing I would like to emphasize that an osteotomy should never be done in any case in which the pelvis can be restored to a functional position under the trunk by other procedures. It is indicated only in the uncorrectable fixed obliquities.

In severe unilateral gluteus medius weakness, the operation should be reserved for patients who cannot otherwise be made ambulatory.

ABSTRACT OF DISCUSSION

DR. CHARLES L. LOWMAN, Los Angeles: The positive Trendelenburg produced by the weakening of this important stabilizer tells the tale, and one sees the shifting and tilting of the pelvis described by Dr. Irwin. In the advanced cases of severe deformity such as he has described, we are confronted with what is probably one of the most vicious problems in orthopedics. The severe obliquity which the author describes in the patient who had had a spinal fusion is a tragic witness to the failure to analyze properly the imbalances of the pelvic and trunk muscles and anticipate the terrible deformities which impended. In these complicated cases the choice of the proper sequence of operative steps is very important. If the surgeon does not work out the kinetic imbalance in abdominal and pelvic musculature but sees only the structural spinal deformity and fuses the spine, he is quite likely after that not to be able to get a clear analysis of their action. The inability to carry out a series of bendings and twistings because of the fusion will interfere. The method of doing the partial osteotomy and waiting for callus formation seems a very wise procedure. In treating the patient whose pelvic deformity could not be changed but the adducted leg could be brought out parallel with the other in the weight bearing line so that the patient could get up, I think Dr. Irwin has shown considerable resourcefulness and surgical acumen in the face of a situation which most men would sidestep.

DR. J. WARREN WHITE, Greenville, S. C.: I wanted to get his ideas on it, and so I asked him to write this paper. He has handled a difficult subject well, and I for one have obtained a great deal out of it. There is one suggestion I should like to make that has helped me in working out some of these problems where it is so difficult to hold the apposition and the abduction alinement of the shaft of the femur. I have used the well leg traction in the way Dr. Hoke used it for years; that is a positive method of applying traction in abduction. It is in my opinion an ideal way of holding these extremities, and it really does hold them most securely. It puts the leg in position where the patient can use it to greatest advantage.

DR. C. E. IRWIN, Warm Springs, Ga.: The subject of this paper has been an extremely interesting problem to me, as I have worked on these deformities from their earliest manifestations to the stages of final fixation. The time allowed for this paper did not permit me to go into the operating correction of these deformities in the earlier stages. Those of us who see these cases comparatively early after the acute attacks should never allow deformities such as I have shown today to develop, but we shall occasionally find cases in which we shall find this procedure to be useful.

Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association and Hygeia, the Health Magazine
Chicago

(Continued from page 178)

(NOTE.—*Following is the twelfth chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of THE JOURNAL. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in THE JOURNAL. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—ED.)

CHAPTER 12. *The Journal Is Born*

1880-1884

1880

NEW YORK CITY

The session of the American Medical Association in 1880 was to prove as the years passed among the most significant of its meetings, except perhaps that of 1847 in which it was established and that of 1901 when it was reorganized. The significance of the 1880 session lies in the fact that it gave birth to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Until THE JOURNAL was established, the minutes of the meetings of the Association and such papers presented at its meetings as were able to survive the censorship of the Committee on Publication were printed in an annual volume of Transactions. These volumes were frequently late in their appearance, insufficiently edited and poorly published. Dr. S. D. Gross, following his visit to the meeting of the British Medical Association, had suggested that the Transactions be discontinued and that a periodical be published, to be known as the American Medical Association Journal. A resolution was passed at the meeting in Washington in 1870 but was immediately reconsidered. Nine years later Dr. S. E. Chaillé of New Orleans read a paper on more efficient organization of the Association in which he urged a change in the method of publishing the Transactions of the Association, but that suggestion was not followed. Then in his presidential address in New York in 1880 Dr. Lewis A. Sayre devoted himself to the needs of the American Medical Association and again considered the publication of the Transactions. He recognized the frequent complaints, the excessive costs, the delays in publication and the fact that the papers often had previously appeared in various medical journals of the country.

"It is very questionable," he said, "whether the mode pursued by the British Medical Association, in establishing their own journal, would not be an immense improvement on our present method. The British journal is the exclusive property of the association; and by the liberal compensation of an accomplished editor, a weekly edition is issued, instead of an annual volume."

Dr. Sayre traced the growth of the *British Medical Journal,* the decision by that organization to publish its regular journal, and the conspicuous progress that the British Medical Association had made once its journal was established. The increase in membership of the British Medical Association was definitely credited to its periodical. He pointed out not only that the British journal had become a powerful means of attracting new members to the association and of keeping them in it by maintaining their interest in connection with the association and "giving them value for their money" but that its advertising columns contributed largely to increase the funds of the British Medical Association, bringing in an income at that time of something like $25,000 a year. He pointed out that the British Medical Association had been able to carry on many activities through the profits made by its publication and that after all expenses were paid there remained an annual surplus of from $3,000 to $5,000 which had been accumulated in a reserve fund. In his consideration of the operation of the *British Medical Journal* he emphasized that not all the papers read at an annual meeting were published, but full discretion was given to the editor to publish or not according to his estimate of the importance and interest of the papers to the members at large. Indeed, Dr. Sayre said that this method included the germs of an association peculiarly adapted to American ideas. "It is essentially democratic and entirely representative. It is dependent for its success on the intelligence, union, and good will of the members. . . . Above all, it is a most successful and influential means of increasing the membership, enlarging the power and widening the basis of the association and of making it a living organism during the intervals between the annual meetings."

With unusual insight Dr. Sayre declared that "the success of the *British Medical Journal* has been largely dependent on the manner in which it has been conducted. The weekly *Journal* did little for the association until it fell into the hands of an experienced editor, whose ability is so generally recognized that there is no need to dwell upon it, and to whom a large and unfettered responsibility is left, although he remains, of course, personally responsible to the executives of the association for the right use of the power entrusted to him, as every editor does to those who appoint him. It will be necessary to find for any organ which this association may publish an editor of recognized position, whom the association would accept as its worthy officer and representative in so responsible a post, a man of literary skill, scientific knowledge and journalistic experience or, at least, journalistic instincts and tact."

This discussion, together with some reference to the metric system and to current accomplishments of American surgery, constituted most of the presidential address of Dr. Lewis A. Sayre. When the address was delivered, a vote of thanks was tendered to the President for his able address. On motion of Dr. William Brodie of Michigan a copy was requested for publication, and his recommendations were referred to a committee of five with instructions to report at the same meeting.

On the first day of the session Dr. Foster Pratt of Michigan presented a report on the suggestions that had been made at the previous session by Dr. S. E. Chaillé of Louisiana, one of which concerned the substitution of a periodical medical journal for the annual volume of Transactions. Most of the report of the Pratt committee dealt with the recommendation that the Association refuse to recognize state societies which did not provide for and encourage the organization of county societies. The Pratt committee did not favor this suggestion. Other proposals concerned the status of members of various types. One proposal urged every medical college to give a lecture or lectures to each graduating class on the importance of medical organization to the profession and the people. The committee felt that a resolution to this effect could do no harm and might do some good, but it pointed out also that the Association had delivered itself from all control of and all responsibility for medical schools and it questioned the propriety or dignity of volunteering advice where it could not compel observance.

As to the publication of a periodical, they felt "it is a consummation devoutly to be wished" and "probably a very large majority of intelligent medical men will unhesitatingly declare in favor of the periodical—*if* (and they italicize the *if*) it can be properly established and maintained." They urged patience in making progress and they expressed their belief that the "safest and surest way to attain most of the desirable ends proposed is to patiently wait the operations of the law of growth." The distinguished committee that made this report included Foster Pratt, N. S. Davis, S. D. Gross and A. N. Bell. This report, on motion of Dr. William Brodie, was accepted and ordered to be entered on the minutes.

On the third day of the session a resolution was offered by Dr. J. R. Bronson of Massachusetts requesting the appointment of a committee of five to report on the following morning on the practicability of formulating all of the proceedings in journalistic form as recommended by the President in his annual address. This resolution was unanimously adopted.

The President of the Association appointed Drs. J. R. Bronson of Massachusetts, W. W. Dawson of Ohio, W. H. Pancoast of Pennsylvania, N. C. Husted of New York and J. S. Green of New Jersey as a committee for formulating the proceedings in journalistic form.[1]

As the session ended, Dr. J. R. Bronson, serving as chairman of the committee to consider publication of the Transactions in periodical form, made the following report:

> The committee appointed to consider the practicability of formulating all the proceedings of this Association in journalistic form find on approaching the subject that its merits are such as to warrant the belief that the medical profession as a whole, upon due consideration, will heartily endorse the radical change proposed, in that it will enable the profession aforesaid to

---

[1] A history of The Journal of the American Medical Association published June 3, 1899 in The Journal through error gives the names of the committee which was appointed to pass on the recommendations in the president's address. That committee included Drs. John H. Packard, S. D. Gross, J. S. Weatherby, E. S. Dunster and Walter R. Gillette.

> commence to utilize at an early day the valuable contributions to the literature of this Association. The details necessarily incident to the change proposed are too important and too numerous to be compassed within the period given the committee to report. We desire, therefore, to report progress.

A motion was made to lay this on the table, but the motion was lost. Then Dr. William Brodie moved that it be accepted and the committee was continued.

At this session the Section on Practice of Medicine had a report on a diet cure of rheumatism which, it is there claimed, was successful, and a rather extensive report on the Salisbury plan in consumption by Dr. Ephraim Cutter of Boston, a method which involved removing a yeast which was supposed to cause tuberculosis from the blood and tissues by starving it out. The yeast apparently fed on starches and sugars and the diet planned to eliminate starches and sugars as much as possible.

Great progress was being made in the Section on State Medicine, which was urging the establishment of state boards of health and of a national board of health. In the membership of this section one finds such names as those of John Shaw Billings and Abraham Jacobi. Dr. John Shaw Billings traced the growth of the movement for a national board of health, recognizing the part played by the American Public Health Association and other groups.

There were proposals for the establishment of a nomenclature and for an adequate census of the population. There was a forward looking paper on the physician in education dealing with the question of the physician to the schools.

1881

RICHMOND, VA.

Early in the meeting at Richmond, Va., in 1881 a report was presented by Dr. Joseph H. Warren of Massachusetts of a trip he had taken abroad in which he referred again with great praise to the *British Medical Journal* and to its editor, Mr. Earnest Hart, who, "by his great push and enterprise, has caused the journal to outrank any other journal published by any other medical association." He pointed out that the *British Medical Journal* had brought into contact with that association the best men in the British medical profession and, he continued; "I would, Mr. President and Fellows, that the American Medical Association had, in place of its ponderous annual publication, a weekly journal published under its own immediate auspices; and I would that at its head we had an editor with a vigor equal to that of Mr. Hart, that he might, with his editorial staff, stir all the dry and moldering members into a new life, and that he might infuse into them an interest and activity equal to or even greater than that which the British Medical Association shows today."

On the second day of the session Dr. John H. Packard of Pennsylvania read the report on journalizing the Transactions and submitted a resolution that a committee of five be appointed whose duty it should be to digest and report in detail as early as possible a plan for the publication of a weekly journal by the Association, the nomination of an editor, his salary, and the time and place of publication of such a journal. On motion of Dr. N. S. Davis this resolution was amended to leave out the nomination of the editor. Next a motion was offered that the secretary and treasurer be added to the committee and then another resolution urged that the members of the previous committee attending the session be added to the new committee. The committee appointed included Drs. John H. Packard, N. S. Davis, John Shaw Billings, Lewis A. Sayre and R. Beverly Cole, with the treasurer and the secretary.

By this time it was becoming apparent to the meeting of the American Medical Association that the system of appointing delegates from the state and county medical societies and from similar groups was not working satisfactorily. Members continued to urge the development of county medical societies as constituents of state medical societies and to suggest changes in the Constitution and By-Laws to make the Association more definitely a representative body.

The committee which had been trying to get a hearing before the Congress on better social recognition for the medical officers reported that it had arrived in Washington but found the Congress too much preoccupied with "some contested election cases to make any new enterprises probable of success." Besides, the committee had concluded that the resolution did not cover sufficient ground to include all the needed legislation and that the best thing to do was to wait for another session of the Association.

The address of the President, Dr. John T. Hodgen, dealt with the qualifications of surgeons as specialists and with various surgical contingencies.

Unusual in the printed Transactions was a paper on thumb sucking, involving the application of a cuff over the elbow to keep the child from reaching the mouth. In this astute manuscript the author said that thumb sucking is more disastrous to the child than sucking the other fingers because the thumb, once in the mouth, remains there more easily during sleep.

The report of the committee on journalizing the Transactions, signed by Drs. Packard, Gross, Weatherly, Dunster and Gillette, considered various technics for publication of the Transactions of the Association and compared the costs of a periodical with the publication of an annual volume of transactions:

> The great aim of the movement would be to furnish the Association with an organ—an exponent of its principles, a medium of communication between it and its members, between the members themselves and between the Association and the profession at large. The columns of this journal should be open to all respectable contributors. It should be controlled by no clique, free from personalities, high in tone; discriminating, but not prejudiced; independent, but not erratic. All this—and nothing less will warrant any hope of success—implies the securing of the most able editorship. It would be necessary also to provide for the employment of one or more assistant editors, and for the payment of contributors.
>
> Beyond all doubt a weekly, properly conducted, would far better meet the requirements of the case than either a monthly or a quarterly journal; but the labor of editing it would also be much greater. Should the Association resolve to undertake this enterprise, the question of form would be a most important one.

The committee indicated that the method of collecting dues was undependable as a source of income; it felt that there must be regular annual dues. It had obtained from the treasurer of the Association a complete statement of its income and they suggested that each member receive THE JOURNAL in response to the payment of dues. The committee quoted at length from the presidential address of Dr. Sayre as to the factors which should govern the publication of a periodical and the choice of an editor, and it summarized by recommending the publication of the periodical according to the plans that had been mentioned.

1882

ST. PAUL

The first business of the Association at the meeting in St. Paul in 1882 was a battle over the admission of delegates from New York. Most of the state medical societies of the South and Middle West and that of Pennsylvania protested the admission of delegates from the state of New York. All these protests were referred to the Judicial Council. The difficulty lay in the fact that the New York State Medical Society had passed a resolution which was alleged to ignore the Code of Ethics.

The difficulties with New York had to do with the distinctions between allopathists and homeopathists.

Dr. N. S. Davis presented a resolution in behalf of the Women's National Christian Temperance Union.

Then came the report of the committee on journalizing the Transactions, which was so vital to the Association that it was made a special order for the Thursday morning session.

Resolutions continued to be offered from various states condemning any attempts to adopt unusual methods of practice. A new section had been formed, known as the Section on Dental and Oral Surgery.

The report of the committee on publication was signed by Drs. John H. Packard, N. S. Davis, L. A. Sayre, J. S. Billings, R. B. Cole, W. B. Atkinson (the secretary) and R. J. Dunglison (the treasurer). This report estimated the cost of printing THE JOURNAL at about $15,000 a year. It indicated that the annual receipts varied from $2,000 to $6,000 and it felt that changes in the plan of the organization by which the doors of the Association could be opened to all members of the state and county societies on application were imperative. According to a recent census there were some 90,000 physicians in the United States. It was thought that, if 3,000 of these should become members of the Association, the mere expenses of THE JOURNAL would be provided for. The committee also considered the methods by which the business part of the enterprise could be properly carried on. It gave thought to the possibility of selecting an experienced business manager but seemed to prefer the idea of entering into a contract with some well known and responsible publishing house to issue THE JOURNAL for it. In this connection the committee felt that it might be necessary to incorporate the Association so as to give it a substantial character. It gave thought particularly to the appointment of an editor, saying:

> Upon the selection of a suitable man will hinge, in a very great measure, the success of the whole enterprise. He must be possessed of intellectual ability, firmness, tact and judgment; free from partisanship, of high professional and moral tone, and of such standing as will enable him to attract the support and secure the influence of the best class of contributors.
>
> It is very desirable that the editor's relation to the Association should be such as to leave him, as far as may be, untrammeled, while still responsible for the due discharge of his functions; that the arrangement should be such as to make it worth while for a suitable man to accept the position and still to preserve for the Association a just and equitable control of it. There would be obvious difficulties in the way of an election by the whole body annually, and it seems to us that the matter can hardly be placed to advantage in the hands of any of the existing committees.

THE BOARD OF TRUSTEES

With extraordinary wisdom the committee proposed that there should be elected by the Association a Board of Trustees—nine in number—to serve for three year terms and that the appointment of an editor be placed in the hands of these trustees. To the editor it assigned the appointment of assistant editors and on the Board of Trustees it placed responsibility for the conduct of the financial aspects of the publication. The committee recommended that the name of the journal should be THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and that outside subscribers be charged $6 a year for their subscriptions. It indicated, moreover, the method by which subscribers were to be secured.

Following the presentation of this report, Dr. N. S. Davis offered some resolutions, which were seconded by Dr. William Brodie of Michigan and unanimously adopted, making effective the recommendations of the committee.

EXPERT WITNESSES

The question of expert witnesses had also begun to be agitated in the annual session of the Association. A resolution had been offered to the effect that it was "the sense of the American Medical Association that it will be conducive to justice and to the dignity of the profession if medical expert testimony can be presented to the courts without the appearance of bias or influence from either side of the case and simply as a straightforward statement of scientific facts."

PERMANENT SECRETARY AND WASHINGTON

There had apparently begun to be some agitation also against the office of permanent secretary, and a resolution was offered and set by for a year that the nominating committee hereafter annually nominate a secretary who would serve without compensation.

Dr. Davis again offered a resolution requesting that every second meeting of the Association be held in Washington.

THE JUDICIAL COUNCIL

Most of the problems before the Judicial Council related to representatives of homeopathic groups in the Association. After carefully examining the documents relating to the New York State Medical Society, the Judicial Council adopted unanimously the following opinion:

> Having carefully examined the Code of Ethics adopted by the New York State Medical Society at its annual meeting in February 1882 (as furnished by the secretary of said society), the Judicial Council find in said code provisions essentially different from, and in conflict with, the Code of Ethics of this Association; and therefore, in accordance with the provisions of the Ninth By-Law of the American Medical Association, they unanimously decide that said New York State Medical Society is not entitled to representation by delegates in this Association.

The Judicial Council also dropped from membership a number of other physicians on protests from their state medical societies.

THE LIBRARY

Although little has been said in these annual summaries of the work of the Association about the library, which was slowly accumulating in Washington, the librarian reported year after year. The report for 1882 indicates that the library now contained 1,702 distinct titles with about 4,448 volumes, inclusive of pamphlets. The Association was purchasing a good many foreign periodicals and books, subscribing $50 a year to the *Index Medicus* (which needed the help) and making a great many exchanges with the foreign publications.

THE VICE PRESIDENT ACTS

This was the first meeting of the American Medical Association in which the Vice President was compelled to substitute for the president. The task was undertaken by Dr. P. O. Hooper, the First Vice President. He paid gracious tribute to Dr. N. S. Davis, to whom more than to any other one individual the American Medical Association owed its founding and its development. He praised the work of the Association and recorded its success, and he welcomed the establishment of a periodical as a landmark in its progress. Particularly did he exalt the Principles of Ethics, urging the body not to retreat, not to involve itself in a world of inconsistencies. "The broad laws of demarcation between the irregular and the true physician should never be obliterated."

THE BOARD OF TRUSTEES

On the last day of the annual session of 1882 the committee on nominations suggested the following members for the first Board of Trustees of the American Medical Association to serve three years: Drs. N. S. Davis, E. M. Moore and J. M. Toner; for two years, H. F. Campbell, J. H. Packard and L. Connor; for one year, P. O. Hooper, A. Garcelon and L. S. McMurtry. This was adopted.

1883

CLEVELAND; THE FIRST EDITOR

At the meeting in Cleveland in 1883 Dr. N. S. Davis, chairman of the Board, reported that 2,100 pledges to sustain THE JOURNAL had been received from a mailing of 40,000, thus assuring its publication. Estimates for printing had been obtained, and as the bid of a Chicago company was lowest Chicago was recommended as the place of publication. The Trustees were authorized to proceed with the publication of THE JOURNAL. Dr. N. S. Davis was then introduced to the Association as the editor-in-chief and made some remarks. A vote of thanks was tendered to Dr. Davis for his willingness to assume the burdensome duties.

The original intention was to issue the first number of THE JOURNAL on July 1, but owing to the publisher's lack of facilities for such publication the first number of THE JOURNAL did not appear until July 14, 1883. It contained in its thirty-two pages a complete transcript of the minutes of the meeting of the Association. This was a clear gain of ten months on the usual time of appearance of the Transactions. The periodical also contained a number of scientific articles, some medical news and some notes of correspondence. It was printed by A. J. Newell at 71 and 73 Randolph Street. There is a preliminary note quoting the Transactions of the Association for 1851 which reads "The American Medical Association, though formally accepting and publishing the reports of the various standing committees (and sections), holds itself wholly irresponsible for the opinions, theories or criticisms therein contained, except otherwise decided by special resolution."

The Transactions of the Association as they appear in this first issue of THE JOURNAL represent a notable advance over previous Transactions in at least two particulars. They are more complete, and the various subjects discussed are introduced with suitable headings so as to make reference easy.

The first Board of Trustees adopted certain principles which deserve repetition. For instance, the editor was asked to secure as far as practicable the services of reliable correspondents in each of the great medical centers of the country and some of those in Europe. He was asked to maintain correspondence with the secretaries or proper officers of state medical societies. He was asked to solicit "advertisements from all medical educational institutions and hospitals open for clinical instruction, from book publishers, pharmaceutists, instrument makers, and all other legitimate business interests. But all advertisements of *proprietary, trade mark,* copyrighted or patented medicines should be excluded. Neither should any advertisements be admitted with one or more names of members of the profession as indorsers, having their *official titles* or *positions* attached.

"In other words, no advertisements should be admitted which fairly contravene in letter or in spirit the principles of the national code of ethics."

A special committee was established to nominate trustees to take the place of those whose terms had expired. This committee stated that the following were selected to complete the Board: Dr. Alonzo Garcelon of Maine, Dr. P. O. Hooper of Arkansas, Dr. L. S. McMurtry of Kentucky and Dr. J. H. Hollister of Illinois.

At this session the Association took action on a resolution urging the establishment of nurses' training schools in every county in the nation. It was proposed to form a special section on psychologic medicine. A resolution to revise the Principles of Ethics was laid on the table.

The address of the President of the Association, Dr. John L. Atlee of Lancaster, Pa., was devoted largely to reminiscences to some of the distinguished teachers of the past, including Dr. Caspar Wistar, Dr. Nathaniel Chapman, Dr. Philip Syng Physick and Dr. George McClellan. He had been a classmate of Dr. Isaac Hays, editor of the *American Journal of the Medical Sciences,* and he referred to him as "one who has done more for American medical journalism than any other physician in the country."

The first issue of THE JOURNAL in which the Transactions and the address of the President are published includes also a paper on "Tonsillotomy Without Haemorrhage" by W. C. Jarvis of New York and one by Harry Gradle of Chicago on "The Treatment of Otorrhoea with Antispetic Powders." There is another paper on plastic surgery involving restoration of a lost cheek by a flap from the shoulder, written by Dr. Edmund Andrews of Chicago. There is an editorial on the change from the Transactions to a periodical and information to the effect that an index to the Transactions of the Association from its beginning to 1883 had been prepared by the permanent secretary. There is a request for exchanges and the hope that publishers would send one copy to the Library in Washington and another to THE JOURNAL.

Rather amusing is a communication from Philadelphia telling of the excitement caused there by the appearance of the new publication. Philadelphians "hope that THE JOURNAL will be truly national in character." Interesting also is a letter to the editor from Washington, D. C., proposing the formation of an insurance company to provide benefits for widows and orphans of physicians. Some news notes with reference to transactions of various societies complete that issue.

The second issue of THE JOURNAL contains the proceedings of the American Association of Medical Editors which was held in Cleveland, June 5, 1883. Dr. N. S. Davis was the president of that organization and he delivered an address on the present status and future tendencies of the medical profession in the United States. At the conclusion of the medical editors' meeting on June 5 that association adopted a resolution recommending Dr. N. S. Davis of Chicago to the American Medical Association as being the most suitable editor for THE JOURNAL which they shortly proposed publishing. The address by Dr. Davis on the present status of the medical profession reviewed in detail the manner in which the American Medical Association came into being as a representative body interested largely in improving the standards of medical education. He was desirous that more physicians associate themselves with organizations in the states and counties. He felt the need of specific research on definite problems.

"It is this want," he said, "of definite, well devised plans of original investigation and inquiry on the one hand, and of well planned cooperative observations on the other, that has led many of the wisest and most learned among us to think that all our medical organizations, whether state or national, amount to little more than a means of making professional acquaintance, enjoying annual seasons of social intercourse with each other, highly gratifying in their nature but accomplishing little in the advancement of medical science."

He deprecated the interest in specialization, saying "In the brief period of less than fifty years we have specialties in almost every part or region in the human body." And he was concerned with the restless desire for privileges to advertise these specialties more liberally than the general code of ethics adopted by the American Medical Association would permit. He saw already a tendency to disintegrate the national organization through special interests and influences. Dr. Davis emphasized the laws that had been passed in the various states following the establishment of the American Medical Association to protect the public:

> It has appeared from the review of the past that, during the first twenty-five years of our national existence, laws were enacted in nearly all the then existing states designed to protect the people from the impositions of ignorant and designing men claiming power to heal the sick, by prohibiting unlicensed practice, etc.; but which were nearly all repealed or so amended as to render them inoperative during the next thirty years by means of popular prejudices and false representations attendant upon the rise and spread of Thompsonianism and homoeopathy; the one playing upon the mind of the masses with all the power of bold and ignorant empiricism, and the other captivating the credulous tendencies of the more fashionable circles by a mystic transcendentalism inclosed in sugar pellets. The first has died a natural death, leaving a sickly offspring bearing the name of eclectics, while the second, like some medicines, retains its name as a "trade mark," and its organization for political influence, while its once transcendental vagaries have long since practically ceased to exert an influence over the treatment of disease.

Reviewing the status of the profession, he found some 60,000 to 70,000 persons, more or less educated, engaged in the alleviation of human suffering, with many voluntary society organizations for the mutual improvement of its members, all centering in one representative national organization—the American Medical Association. He found the education of the profession in the hands of sixty or seventy independent medical schools with the influence of their rivalry perverted by the recognition of their diplomas as equivalent to a license to practice. He deprecated the long absence of any adequate laws for protecting the people from the imposition of and ignorance of medical pretenders, but he saw great gain in the establishment of national and state boards of health and regulating the laws for the practice of medicine in several of the states. These legislative tendencies, he felt, would determine the status of the profession for the next fifty years.

MEDICAL ADVERTISING

Later issues of THE JOURNAL included a Chicago letter and a Boston letter, but by the issue of July 28, 1883 there began to be some protests against the advertisements. Witness the following delightful document from Burlington, Iowa:

> *Dear Doctor:*—I have received your first number and am delighted with it as a journal; but I am not so pleased with your advertisements. Parke, Davis & Co. have bored the physicians of the Northwest sufficiently with their ready-made prescriptions. In fact, they have taken the place of Ayer's Pectoral and Humbold's Buchu and are patronized by all the quacks and all the patent medicine men in this country. Soon I presume you will advertise Warner's safe cure for kidney trouble. Now, I protest right here against the organ of the American Medical Association being the means of disseminating any such advertisements. I ask a place for this in your correspondent's column, and see if I am not indorsed by nine tenths of the physicians in the land.

PROGRESS OF THE JOURNAL

A little later there is a Cincinnati letter and it begins to be apparent that the weekly journal is serving a most useful purpose. The medical progession has found in THE JOURNAL a voice. Physicians begin to express their opinions of new discoveries and of social changes. The papers read at the sections at the meeting in Cleveland are being published within a month or two of their reading. Speeding up of report intensifies the speed of progress. There are discussions in the correspondence columns of contract practice and medical ethics, of the question of consulting with irregulars, and more and more protests against the exploitation of the medical profession by the venders of "patent" and proprietary medicines.

The issue for Oct. 27, 1883 actually contains a paper read before the American Academy of Medicine on Oct. 9, 1883. It is entitled "Is It Fair?" and it is a study of the comparative political position of the medical profession in the United States.

Toward the end of the volume there are letters from Indianapolis and from Washington, D. C. The final number for the year indicates that 3,000 or 4,000 copies are being published each week and that it has been a considerable burden on the printers. A title page and an index are provided and the editor offers to make good missing numbers to any subscriber, to any person who wants to have a complete file for the year. The editor had also arranged to secure letters from Paris, of which two were published in the volume; one was published from London.

1884

WASHINGTON, D. C.

THE JOURNAL continued on its even course. During the first months of 1884 it began to provide fields of interest to the medical profession introduced in Washington; but apparently the editor was having some difficulties in filling his pages, for he began to republish from other periodicals and he included a good many trivia in his pages. His correspondent from Burlington, Iowa, who signed himself with the initials E. H. H., continued to trouble the editor with his letters about the advertising, being now annoyed by the advertisements of medical institutions, which were apparently somewhat profuse in their descriptions of the physicians who conducted these institutions.

THE NEW YORK STATE MEDICAL SOCIETY

An important editorial appeared in the issue for Feb. 9, 1884 discussing the action relative to the New York State Medical Society that had taken place in Cleveland. The editorial asked "Was the New York State Medical Society extruded from membership in the American Medical Association, or did she take herself out by her own act?" Apparently some of the New York delegates were a little disturbed by the situation and were proposing a reconciliation. The reconciliation was to be on the basis that the Association would thereafter recognize as a delegate any licensed physician from the state which sent him.

In the issue for Feb. 23, 1884 there was a discussion of a proposed resolution from St. Louis asking the Association to deny representation to medical colleges which paraded the names of the professor in their circulars. The editor called attention to the fact that the Association had not had any representatives from medical colleges for a dozen or fifteen years. This gave the editor opportunity to discuss still further the questions raised by the representative from New York State who proposed the reconciliation. But the New York correspondent did not take this lying down. His letter in the issue for February 23 began with the statement that the editorial confirmed his statement, "if any confirmation was needed," that the American Medical Association was in the grasp of a few men, and the writer ended with this paragraph:

> Your statements only confirm those of my former letter in showing that, however cunningly the machinery of the American Medical Association may have been devised in the interests of harmony, it certainly is not, in its plan of working, entitled to the name of "American" and must undergo material change.

By this time a writer from Buffalo had decided that the argument was sufficiently good to permit him to take a hand, and his letter also was duly published.

MEDICAL EDUCATION

The issue for April 5, 1884 had an excellent editorial on medical colleges and their endowments which ended with the significant statement that "it is not new colleges that is [sic] required but a more efficient management of old ones."

The address of the President, Dr. Austin Flint, for 1884 appeared in the issue for May 10, 1884. It was a review of the history of the Association, with increasing emphasis on the necessity for high scholarship among those who wish to be physicians, and it came to its end with the paragraph "The practical question is 'What can the Association do to promote more and more the elevation of the standard of medical education?'" He did not accept the charge that medical education in the United States was unworthy of any commendation and as contemptible when contrasted with the educational advantages of other countries. He found advantages in the American methods of teaching. He defended the medical schools against the charge of venality and deception and he set up a program for elevating the standard of medical education, utilizing the forces of the American Medical Association. Here, for the first time, is the suggestion of a standing committee on medical education designed to secure uniform action with reference to requirements for matriculation and for graduation.

THE PRINCIPLES OF ETHICS

An equal portion of Dr. Flint's address was concerned with the Code of Ethics; he discussed the new code—so called—in the state of New York which would permit consultations with all legally qualified practitioners of medicine. His argument was legalistic and he was inclined to believe that the New York code could be accepted, since that code defined an irregular practitioner as one whose practice was based on an exclusive dogma to the rejection of the accumulated experience of the profession. He emphasized that the needs of the patient are always to be the first consideration and he approved that, except in extreme emergencies, consultation with quacks, charlatans and irregular practitioners can only injure humanity.

Here we find the address of the President and also of the chairman of the Section on the Practice of Medicine appearing in THE JOURNAL at the very week of the meeting.

The editorial for May 17 was an obituary notice of S. D. Gross, followed by a report in editorial form of the thirty-fifth anniversary meeting of the American Medical Association. The meeting was held in Washington. More than 1,200 regularly registered members were present. The papers had been well chosen, and there was some condemnation of the Section on State Medicine for having only a few papers and those not especially well selected. In his address, Dr. Austin Flint had paid tribute to Dr. S. D. Gross, who had died at the very hour when the address was being delivered.

ANIMAL EXPERIMENTATION

For the first time the Association found it necessary to adopt a resolution in defense of animal experimentation. A committee of seven was appointed, to be known as the Committee on Experimental Medicine, charged with the duty of opposing, by all legitimate means, unwise or ill considered legislation. This battle against the forces of ignorance and fanaticism had gone on and on with the victory never permanently won, so that year after year in many of our states, in many of our large cities and even in the Congress of the United States it becomes necessary to defend the use of animals in experimentation for the advancement of medical science and the improvement of human health.

THE JOURNAL

The report of the Board of Trustees which appeared in this volume pointed out that the regulation relative to advertisements established at the Cleveland meeting was a wise restraint tending to elevate the dignity of THE JOURNAL but at the same time deprive it of a considerable revenue.

The publication of THE JOURNAL had brought about a remarkable increase in the income of the Association. The Association found itself with a surplus in the treasury over all expenses. In the editor's report to the Board of Trustees he pointed out that he had been compelled to reject a good deal of advertising on account of the restrictions.

Having made an excellent report, Dr. Davis had offered the Trustees his resignation. The Board, with but one dissenting voice, requested Dr. Davis to withdraw his letter of resignation. In a letter of response he was impelled "now to yield to your nearly unanimous request that I withdraw the resignation tendered" but he stated definitely that he must positively withdraw from a position involving so much labor and responsibility at the end of the next year.

A minority report was presented by Dr. John H. Packard. Dr. Packard pointed out that the Association was able to have a surplus because the editor abstained from drawing his salary and that the board was counting on his abstaining from drawing his salary for some time to come. However, this was not his chief complaint. He felt that THE JOURNAL had not, in his opinion, approached anywhere near the standard of what the organ of the associated medical profession of the United States should be. He felt that publication of THE JOURNAL in Chicago was difficult because there was not sufficient access to large libraries. He felt that contributions to its pages should be properly and liberally paid for. He did not like the printing. He thought that the resignation of Dr. Davis should be accepted and that the publication office of THE JOURNAL should be transferred to some Eastern city, preferably Washington, Philadelphia or New York. The minority report was first called for and it was laid on the table by 191 ayes to 74 noes. The majority report was then adopted.

DIFFICULTIES AND DISTURBANCES

There were other points of difference which now began to be discussed in the House of Delegates. There were many resolutions recommending changes in the Principles of Ethics. It was proposed that the Section on Ophthalmology, Otology, Laryngology and Rhinology be divided into two sections, one dealing with ophthalmology and the other with otology, laryngology and rhinology. There was even a resolution calling attention to the fact that the American Medical Association was composed of all nationalities, denominations, sects and creeds, and that many of its members were skeptics and materialists and that therefore the custom of opening the sessions of the American Medical Association with a prayer should be abolished. This motion was unanimously rejected.

Congress was urged to make proper preparations for the Medical Library and Museum. There was a resolution, well in advance of its time, asking Congress and the legislatures of the several states to label lye, a caustic potash, as poisonous. It took about fifty years for Congress to act on that one, and it required the work of Chevalier Jackson in our time to make the Congress realize the necessity.

In his editorial presenting the Transactions, Nathan Smith Davis proposed several excellent technics for registration at the annual sessions. He pointed out that the effectiveness of the sections depends on the permanence and efficiency of their secretaries and he recommended greater permanence in this office.

One is constantly amazed at the remarkable talent for organizational efficiency and the supreme qualities of leadership manifested by Nathan Smith Davis in the first forty years of the work of the American Medical Association. If ever it could be said that one man more than any other deserved credit for having inspired the necessary cooperation for advancement, for having manifested ingenuity of thought and action, for having worked with indomitable courage and energy for the advancement of an organization, that credit should go to Dr. Nathan Smith Davis.

The first issue of THE JOURNAL for June 1884 contained a paper by Leartus Connor on the "American Medical Association of the Future." He found that there had been 509 medical periodicals in the United States up to that time, of which 136 were surviving and 373 departed. He analyzed the forces which prevailed toward the inauguration of such journals and their continuance. "THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION," he said, "is now passing through the first stages of a similar development under less favorable circumstances. Like its English brother, it has already been subjected to sharp criticism, it has had to meet the envy, jealousy and disappointed ambition of disappointed persons and localities, but we have no doubt that in the end it will surmount all these obstacles and have a future even more brilliant than its English brother."

He concluded with the suggestion of some general principles along which medical journals must move. He felt that a medical editor, like a poet, is born and not made and that he must be given freedom in his work. He was certain that the most influential medical journals would develop in the great commercial centers and that with increasing wealth and power they would be able to pay their editors such salaries that they could devote all their time to the profession of medical journalism. The medical journals of the future would be more and more separated from medical colleges, medical societies or other corporate bodies that cripple their perfect independence to work and think and speak for the great masses of the medical profession. "The advertising claims of the medical journal of the future," he said, "will have less and less influence over the utterances of the editorial pages" and, further, that the advertising columns of the best medical journals of the future "will contain a notice of nothing which shall not be free to every pharmacist to manufacture, as free as the formulas of the Pharmacopeia." He felt that the medical journals would be able to pay more for the contributions to their pages as well as to their editors. And, finally, he was convinced that experience would do most of the teaching. "The past shows," he said, "that it is impossible to persuade a man that he is unfit to run a medical journal until he has convinced himself by trying."

In the issue for June 28, 1884 N. S. Davis made some comments on the completion of his second volume. He admitted that there had been some imperfection in his work, but he was willing that the numbers issued during the last three or four months should be compared with reference to all that related to style of publication with the best weekly medical publications in this country. He was a little burned by some criticisms from the *New York Medical Journal,* which in one issue had published half a column of corrections of its own typographical errors; and he called attention to a few mistakes that he had found in the *Record,* "whose editor is so fond of criticizing others." Dr. Davis was smarting over the criticisms from the East and he said "Had either of these blunders occurred in THE JOURNAL or any other outside of 'one of the great *Eastern* cities' it would have been held up as a sample of incompetent provincial work for the next six months." *(To be continued)*

Clinical Notes, Suggestions and New Instruments

HABITUATION TO MEPERIDINE HYDROCHLORIDE (DEMEROL HYDROCHLORIDE)

JOHN J. CURRY, M.D.
Boston

The problem concerning the liability of addiction to meperidine hydrochloride (Demerol Hydrochloride) has attracted renewed interest because of recent publicity concerning the drug in the lay press. While numerous reports (Batterman[1] and others[2]), some of them extensive, have appeared dealing with the clinical use of meperidine hydrochloride, it will probably require considerable time before detailed information concerning the extent of habituation and addiction is collected. At present it appears that since euphoria may occur following the use of the drug, certain persons are likely to become habituated, especially if it is administered over a prolonged period. However, in many instances difficulty has not been experienced in discontinuing the medicament after it has been prescribed for several months.

When meperidine hydrochloride was freely administered to one group and given in therapeutic amounts to another group of confirmed morphine addicts true addiction resulted, but the duration of physical dependence produced was considerably shorter than that with morphine.[3] It was concluded that meperidine hydrochloride possessed addictive liability but that with clinical doses the addictive liability of the drug was less than that of morphine.

Clinicians who have had extensive experience with meperidine hydrochloride have concluded that for routine use the addictive liability is minimal and certainly less than that with morphine. In the continental literature it has been noted[2] that several cases of addiction in severely psychopathic persons or former morphine addicts have been described. In this country only 1 case of spontaneous addiction to meperidine hydrochloride is reported[4] and this patient had been addicted previously to Pantopon (the total alkaloids of opium as soluble hydrochloride) and habituated to dihydromorphinone hydrochloride and barbiturate. In this case the estimated dosage of meperidine hydrochloride was in the range of 600 mg. a day. Cases of addiction following its ordinary therapeutic use have not to my knowledge been described. Anslinger,[5] however, has stated that the files of the Narcotic Bureau contain numerous cases of addiction involving the use of this drug. It is not clear whether or not these are cases of primary addiction.

The case of a young, highly intelligent patient who was familiar with drugs and their reactions and who ingested considerable quantities of meperidine hydrochloride by mouth over an extended period is recorded. Unfortunately, six months elapsed before details of the episode were elicited. The ingestion of large amounts of the drug was confirmed by a member of his family and a friend.

REPORT OF CASE

A white man aged 32, married, was seen because of malaise and mild epigastric cramps. About one year prior to this visit his regular physician had prescribed meperidine hydrochloride for similar symptoms. The administration by mouth of 100 mg. of the drug twice a day resulted in relief of symptoms and a definite sense of well-being. He continued the medicament as prescribed for a three week period, until the euphoria began to disappear and the cramps reappeared. At this time, of his own accord and chiefly to recapture this sense of well-being, the dosage was increased to 150 mg. twice a day. For about one week the euphoria returned, and he then also experienced a sensation of dryness in the mouth. The amount of the medicament was then increased to 250 mg. twice a day, again with a return of the feeling of euphoria. In addition, he began to experience anorexia with an increased sensation of warmth and sweating. This dosage of 250 mg. twice a day was continued for approximately one month, and at the end of this period there was a loss in weight of 15 pounds (7 Kg.). In the following four week period it was necessary to increase the amount of drug ingested to 250 mg. three times a day in order to maintain his euphoria, and an increasing number of symptoms developed. Shortly after he took the meperidine hydrochloride there was an increased alertness and his performance of work was exceptionally good. Two to three hours later, however, there was an intense desire for the medicament, associated with a loss of self confidence.

At this time he frequently became irritable, and his temper was occasionally out of control. Slight excitement would cause facial pallor and tremors of the entire body. As far as he could recollect, there was a lack of notable change in the size of the pupils.

He smoked an increased number of cigarets but did not take alcoholic beverages. Anorexia continued and further loss of weight ensued. Nausea and vomiting did not appear. Thirst was extreme and persisted despite the ingestion of large quantities of water and from 1 to 3 quarts of milk a day. There had been a gradual onset of constipation, so that a dry, hard movement occurred at from three to five day intervals. Despite the increased intake of water the desire to urinate was absent during the day, but on reclining at night there occurred a sudden intense desire, which was repeated four to five times within an hour and on each occasion resulted in a copious output of urine. Sweating also appeared more prominently at night.

He began to awake from sleep occasionally with a sudden start but did not have any unusual dreams that he could recall. In the morning there was increased difficulty in rousing himself, and he felt mentally sluggish. A tic of the right eyelid developed and muscular tremors appeared which occurred chiefly in the lower extremities. Palpitation of the heart occasionally was noted but was never bothersome.

From the Robert Dawson Evans Memorial, Massachusetts Memorial Hospitals, and the Department of Medicine, Boston University School of Medicine.

1. Batterman, R. C.: Demerol: A New Synthetic Analgesic; Its Indications as a Substitute for Morphine, Connecticut M. J. **8:** 13-17, 1944; The Treatment of Arthritic Pain with Demerol: A New Synthetic Analgesic, Ann. Int. Med. **22:** 282-285, 1945. Batterman, R. C., and Himmelsbach, C. K.: Demerol: A New Synthetic Analgesic: A Review of Its Present Status and Comparison with Morphine, J. A. M. A. **122:** 222-226 (May 22) 1943.

2. Christie, R. V.: Analgesic Value of Pethidine by Mouth, Lancet **1:** 294-295, 1943. Noth, P. H.; Hecht, H. H., and Yonkman, F. F.: Demerol: A New Synthetic Analgetic, Spasmolytic and Sedative Agent, Ann. Int. Med. **21:** 17-34, 1944.

3. Himmelsbach, C. K.: Studies of the Addiction Liability of "Demerol" (D-140), J. Pharmacol. & Exper. Therap. **75:** 64-68, 1942; Further Studies of the Addiction Liability of Demerol, ibid. **79:** 5-9, 1943.

4. Schneck, J. M.: A Case of Addiction to Demerol, Bull. Menninger Clin. **8:** 122-125, 1944.

5. Anslinger, H. J.: Addiction to Demerol and the Reader's Digest, J. A. M. A. **131:** 937 (July 13) 1946.

About the end of this month euphoria disappeared, and with the appearance of increased irritability the dosage was again raised to 300 or 350 mg. three times a day. A fleeting sense of well-being returned, and he continued to maintain a keen interest in his work. Anorexia persisted but there was still an absence of nausea or vomiting, and bowel habits remained unchanged. Nocturia increased to eight or nine times with sharp urgency. Insomnia began to appear but did not disturb him to any extent. Meperidine hydrochloride was not taken after midnight. Muscular tremors recurred more frequently, especially if he suddenly moved after sitting in a relaxed position. Actual shaking of legs and thighs took place and was relieved in four to five minutes by walking about. Headaches, dizziness or visual disturbances were not observed. At the end of a month on the above dosage, in an unsuccessful attempt to regain some degree of euphoria the dosage was increased to 1,250 mg. a day. The drug now caused increased irritability and nervousness, and he became disgusted with his predicament. After about one week on this increased dosage he fell on two occasions and finally collapsed in the bathroom. He was admitted to a local hospital for a period of seven days, and during that time he was asymptomatic and had no desire for the drug. For three days after discharge from the hospital a slight desire reappeared, and on the third day he took 100 mg. every two hours for five doses. Euphoria reappeared, but he became dyspneic and felt dizzy and faint. The medicament was discontinued and has been avoided since.

COMMENT

It appears remarkable that such a large quantity of meperidine hydrochloride was ingested over a period of about seventeen weeks and its use then discontinued with so little difficulty. Craving for the drug was absent while the patient was hospitalized and physical signs or symptoms did not appear when it was discontinued. Between the seventh and the tenth day after the drug was stopped a mild desire for it reappeared. At this time he again took some meperidine hydrochloride but such undesirable reactions occurred that the drug was again discontinued. It would appear, then, that in this patient habituation developed becase of the sense of well-being induced by the meperidine hydrochloride. While in some instances it is difficult to be sure that physical dependence is not established, the lack of signs and symptoms in this case after the drug was discontinued would seem to indicate that true addiction was not produced.

SUMMARY

A patient aged 32 ingested about 72 Gm. of meperidine hydrochloride (Demerol Hydrochloride) over a period of approximately seventeen weeks. Because of the occurrence of euphoria, habituation resulted, but true addiction apparently did not develop.

APPARATUS FOR THE CONTROL OF VAGINAL URINARY INCONTINENCE DUE TO FISTULAS

MARIO A. CASTALLO, M.D.
Philadelphia

Uncontrolled urinary seepage from the vagina due to fistulas is a source of discomfort and irritation. Since a vesicovaginal fistula in many instances cannot be repaired in the acute stages, weeks and months must elapse before an attempt at closure is made. During the interim the patient's vulva and perineum become excoriated.

The apparatus employed to obviate the discomforts accompanying urinary fistulas consists of a vaginal diaphragm fitted to the patient for size and a mushroom catheter (fig. 1 *A*). A small opening is made in the diaphragm, the upper portion of the mushroom catheter is cut off (fig. 1 *B*), and the resultant flange on the catheter is glued to the inner side of the diaphragm, with the type of glue commonly used in all operating rooms to repair rubber gloves (fig. 1 *C*). The proper size diaphragm is ascertained and placed in the vagina as in figure 2. The catheter is connected by rubber tubing to a drainage bottle at the side of the bed.

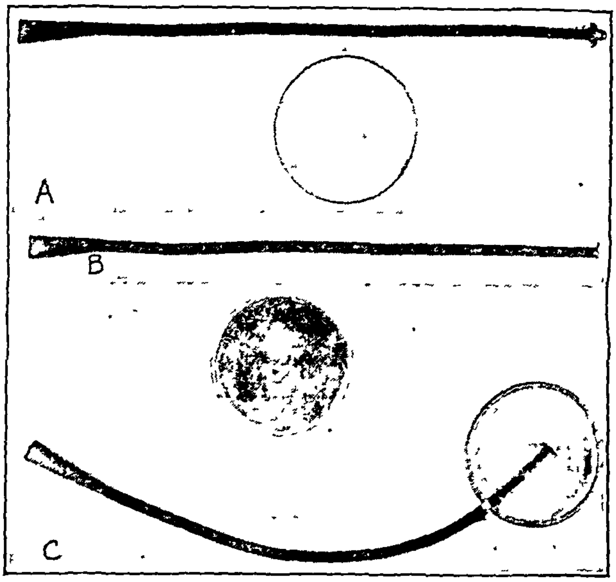


Fig. 1 *A*.—Mushroom catheter and vaginal diaphragm. *B*, upper portion of catheter is cut off. *C*, resultant flange is glued to the inner side of the diaphragm.

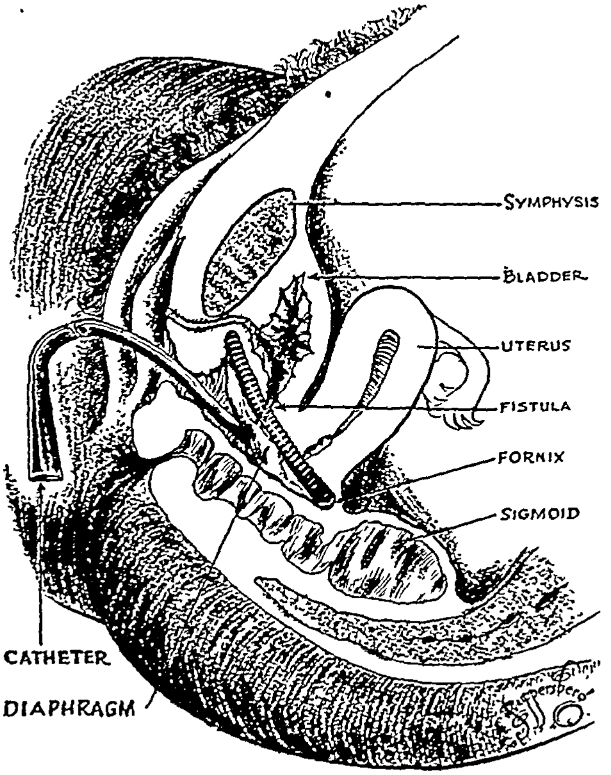


Fig. 2.—Diaphragm in the vagina.

The apparatus has been used now for over two months by a bedridden patient at the Jefferson Medical College Hospital, and it has been a source of great comfort to the patient and has made nursing care easier. A no. 75 diaphragm was used while the patient was in bed. After the patient became ambulatory a no. 80 diaphragm proved more efficacious. While the patient is on her feet the catheter is connected to a small baby-sized hot water bottle strapped to the patient's leg, allowing the patient her usual freedom.

1621 Spruce Street.

Council on Foods and Nutrition

The Council on Foods and Nutrition has authorized publication of the following article. It consists of portions of a paper entitled "Basic Research Needs from the Viewpoint of a Pediatrician" and read in Washington, D. C., before a joint meeting of the Scientific Advisory Committee and the Food Industries Advisory Committee, the Nutrition Foundation, April 4, 1946. James R. Wilson, M.D., *Secretary.*

SOME BASIC RESEARCH NEEDS IN NUTRITION

PHILIP C. JEANS, M.D.
Iowa City

If one were to ask various physicians their concept of basic research, each would give a different reply, a reply dependent on individual special interest. It is generally in the field of his special interest that a person sees most clearly the borders of information and the specific needs for data.

Evidence is accumulating that good nutrition is highly effective in preventing recurrences of rheumatic fever. More evidence is needed as to the exact role that nutrition plays. If good nutrition is effective in preventing recurrences, no doubt it is also useful in preventing the initial attack.

More information is needed concerning the relationship of nutrition not only to rheumatic fever but to resistance against infections in general. Experiments with animals repeatedly have shown a relationship, but they have not shown the specific factors or the mechanisms, nor has the application of this evidence to human beings been proved. Nutrition during growth is of paramount importance to the pediatrician. The unanswered questions are legion. One needs more information in regard to the factors which affect fetal nutrition and development; such knowledge should help to reduce the infant mortality rate. More should be known of the composition of the body during various stages of growth. This knowledge would be of great aid in determining dietary requirements.

Of special interest to the pediatrician are the relative biologic values of human and cow's milk. It is known that babies fed human milk have a vastly different body composition than those fed cow's milk. The baby given cow's milk has more protein and mineral and less water. Which composition is preferable, if either? Is human milk protein superior to that of cow's milk? At present there is no satisfactory method to determine the value of a protein in that it is not known how to construct an experimental diet to exclude the influence of unidentified factors. Other protein problems are of importance. There is need for better methods for estimating the amino acids in foods. The bioassays used are not yet specific. Along with knowledge of amino acid content of foods the amino acid requirements must be known. Such information would be of great aid in assessing and prescribing diets and of special importance in successful intravenous feeding, a phase of medical management now coming into prominence. Often circumstances arise in which intravenous alimentation becomes necessary. The methods are not yet wholly satisfactory. While the nitrogen requirements are being met fairly well, the energy needs of the body offer greater difficulties in that an excess of sugar is required. Suitable preparations of fat and methods of administering them would solve much of this problem, and apparently the solution is just around the corner.

Intravenous alimentation is closely linked with the formation of body proteins, particularly those of the blood. More must be learned concerning the factors affecting the formation of blood proteins—factors affecting the rate of formation and those that determine their normal level. Such knowledge would not only be of advantage in promoting better understanding of normal body processes, but it would be of greatest assistance in treating those chronic diseases in childhood, such as nephrosis, in which the blood proteins are consistently low and are restored to normal with the greatest difficulty.

While dietary requirements and recommended allowances have been set up with good nutritional authority behind them, it is recognized that the actual requirement of few of the nutritional essentials is known with accuracy. Perhaps a few unknown vitamins exist, but among those that are known the role of several in human nutrition is not yet determined. Of the two common varieties of vitamin D (vitamins D_2 and D_3) the relative value in human nutrition has not been determined with finality; this information is of much more than academic interest. Of the various periods of life that have been studied from a nutritional standpoint the most neglected has been that during the prepuberal growth increase and adolescence. The few studies that are recorded indicate a need for more extented and intensive observations. While physicians may consider that they are fairly well informed concerning the nutritional requirements of those in health, they are definitely lacking in information as to the requirements as affected by disease. I believe this group is aware of the difficulties confronting those who wish to make surveys for the purpose of detecting subclinical nutritional deficiencies. Special types of examination are required, and some of the criteria used are not wholly diagnostic of a single deficiency. Search for better diagnostic methods is needed. Knowledge of the dietary requirement for fat by the human being is inadequate. Fats serve several useful purposes, among them the making of food more palatable. Certain fatty acids have been designated as essential, but the experimental observations leading to this designation were made with animals. There are no data that show a human requirement for fat of any variety. Diets extremely low in fat have been fed successfully to children over periods of years, but no one has fed a fat-free diet. Much has been written of the superiority of butter fat over vegetable fats for animals, but no one has shown such a relationship for the human subject. Babies have been reared successfully with diets containing only vegetable fats, but the exact conditions of the experiments with animals were not duplicated.

One of the most controversial subjects of interest to the pediatrician is dental caries. Until some general agreement as to cause can be reached, research must continue. Each person consulted will have his own particular concepts as to the direction the research should take. One of the most widely held views is that dental caries is caused by the bacterial decomposition of fermentable carbohydrates in the mouth. Is it not strange that no one has ever tried the experiment of giving extra sugar to children whose diet is otherwise adequate and complete? In the isolated instances in which this has been done, control of caries was accomplished. A large scale experiment is needed. It is possible that the statement that sugar causes dental caries is comparable to a statement that rice causes beriberi. The Council on Dental Therapeutics of the American Dental Association does not accept advertising to the effect that vitamin D and calcium have any function in preventing dental caries after the teeth are fully formed and erupted. It would seem relatively easy to prove or disprove this point, and such a project should be undertaken in a manner more thoroughly controlled than in the past.

It is my own concept that the factors protective against dental caries are numerous and interrelated. In almost none of the recorded experiments have the subjects and the diets been closely controlled to the extent that only one variable was operating. I believe that the best type of experiment is one in which the subjects receive a fully adequate diet with the exception of the single factor being studied. Furthermore, each subject should be supervised at each meal and between meals in order to know that the prescribed diet is ingested. A good reason why this type of controlled study has not been carried out on a large scale is that it is difficult and expensive; yet, it should be done. Investigators have carried out this type of procedure on a small scale, but on such a scale the results are too slowly accumulated. Orphanages are commonly used for studies of groups of children. These institutions are inadequate because of the lack of cooperation by the administrative personnel and the difficulty of complete regimentation without such cooperation. While the subjects must be completely regimented, it is necessary at the same time to supply facilities for physical, educational, emotional, social and recreational normality of life. The conditions must be such that the lives of the children will be none the worse because of their employment for study.

From the Department of Pediatrics, College of Medicine, State University of Iowa.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - CHICAGO 10, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Eight dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, JANUARY 25, 1947

CHRONIC RELAPSING PANCREATITIS

Diseases in the upper part of the abdomen with pain are difficult to diagnose. Among this group is chronic relapsing pancreatitis, characterized by recurring attacks of pain in the upper part of the abdomen, sometimes associated with disturbances in function of acinar and islet cells of the pancreas and by certain sequelae. These include principally steatorrhea, diabetes and calcification. The disturbances in function are transient and mild at first, but they may later become permanent.

Comfort and his co-workers[1] believe that the disease is not uncommon and that occasional reports in the past of cases of chronic pancreatitis do not represent its true incidence. Twenty-nine cases were selected from a larger series on the basis that the pancreatitis was the sole cause of the abdominal symptoms and that it was recurrent and chronic.

The causes were not discovered. A history of long alcoholism antedated the clinical onset in some instances. Alcohol and dietary indiscretions appeared to precipitate some of the acute attacks. The disease made its first appearance at ages from 10 to 66 years, with the mean at 38 years. It was commoner in men than in women, unlike cholecystic disease. It was also without predilection for the obese.

The attacks of pain were characteristically severe, steady and prolonged. The pain most often gradually increased in severity, reached a plateau and then gradually declined. Such a cycle required from two to thirty-five days, although some were shorter. The intervals between attacks varied from a few hours to six years. The seizures of pain required opiates, which did not terminate the attacks, so that repeated injections were usually necessary. Other symptoms were chills, fever of a moderate degree, diarrhea, nausea, emeses, jaundice and constipation.

The physical manifestations were not fully determined, because few patients were seen during an attack. However, loss of weight, fever, jaundice, shock, tenderness and muscle spasm, epigastric mass, hepatomegaly and splenomegaly were sometimes seen. Some of the findings persisted in the intervals between seizures. Laboratory examinations revealed at times such conditions as slight anemia, albuminuria, glycosuria, elevation of blood urea, hyperglycemia, abnormal glucose tolerance, elevated serum bilirubin, elevated serum amylase and lipase, increased blood sedimentation rate and steatorrhea.

The pathologic changes in the pancreas were determined by examination at operation, by microscopic study of seven surgical specimens and by examination at necropsy in 3 cases. They varied from edema, inflammation, hemorrhagic necrosis and abscess in the acute phase to atrophy, fibrosis, cyst formation, calcification and stone in the late stages. The pathologic changes tended to persist and progress in the intervals between recurrent clinical manifestations. The essential pathologic process may be, the authors believe, either repeated attacks of acute interstitial pancreatitis, repeated sublethal attacks of so-called acute hemorrhagic pancreatitis or a combination of the two. The cysts were pseudocysts and were regarded as encapsulated areas of hemorrhagic necrosis. The stones may have caused the pancreatitis in some cases, but the sequence of events was believed to be more commonly the reverse.

The diagnosis was established from the history and physical examination alone in typical cases. Tests of pancreatic function and x-ray demonstration of calcification proved the existence of disease of the pancreas and aided in the diagnosis, especially in otherwise questionable cases. After pancreatitis was established, its primary nature in the pancreas was proved by the exclusion of diseases of the liver and biliary tract or other organs capable of producing pancreatitis. The history alone plus exclusion of diseases capable of simulating pancreatitis was sometimes sufficient to establish the diagnosis. The diagnosis was easier during acute attacks than during remissions.

In the differential diagnosis disease of the biliary tract, especially biliary colic, must be excluded. Hydronephrosis, perforated duodenal ulcer, intermittent intestinal obstruction and heart disease must be excluded by the history and by laboratory tests. Carcinoma of the pancreas or the ampulla of Vater may cause pancreatitis which at first resembles primary chronic pancreatitis, but carcinoma is progressive. Retroperitoneal tumors and nontropical sprue must also be excluded, the latter especially in the presence of steatorrhea.

The course of the disease was characteristically that of recurring acute exacerbations separated by short or long intervals of relative clinical quiescence. The summation of anatomic changes, which at first were demonstrable only by surgeon or pathologist, eventually produced changes which were recognized on physical or laboratory examination. Diabetes and steatorrhea were caused by as few as two attacks of severe pancreatitis. In other instances these sequelae came on after milder attacks over a period of twenty-three years. Other sequelae developed as the result of pressure of the pancreas, which was enlarged by inflammation, abscess or cyst, on neighboring structures. These included the duodenum, the common bile duct and the superior mesenteric and splenic veins. Finally there were observed sequelae resulting from involvement of neighboring organs by disease.

---

[1] Comfort, M. W.; Gambill, E. E., and Baggenstoss, A. H.: Chronic Relapsing Pancreatitis: A Study of 29 Cases Without Associated Disease of the Biliary or Gastrointestinal Tract, Gastroenterology 6: 239 (April), 376 (May) 1946.

The attacks of pain persisted unchanged, grew worse, lessened or ceased. The progress of the disease did not necessarily follow a parallel course. Seven of the 29 patients have died from pancreatitis, its sequelae or other causes.

In the treatment medical or surgical measures or both were used. Medical treatment was palliative and supportive, with substitution therapy when needed. Surgical measures were used to relieve pressure on the duodenum or the common bile duct, to drain cysts or abscesses or to remove stones from the pancreatic ducts. Pain was sometimes relieved and remissions were induced by surgical measures which reduced pressure in the common bile duct, by drainage of cysts or by pancreatolithotomy. Partial or total pancreatectomy may be necessary in cases of disabling pain.

This paper appears to be a major contribution to the study of diseases of the pancreas and the upper part of the abdomen. Future work will, no doubt, solve the problem of etiology so that a rational basis for specific therapy may be found. Perhaps special attention might profitably be directed by surgeons and pathologists to the question of stenosis or occlusion of the main pancreatic ducts by intraductal papilloma, by inflammatory lesions or by concretions.

NITROGEN BALANCE

Protein intake and the maintenance of "nitrogen balance" have assumed much practical clinical importance. Success has followed the practice of maintaining nitrogen balance in a variety of clinical conditions through the use of parenterally administered protein hydrolysates or amino acid mixtures. A prolonged negative nitrogen balance may lead to a decrease in the plasma protein level, edema, anemia, lowered resistance to infection, increased susceptibility to certain toxic substances, the development of fatty liver or perhaps other serious sequelae.

Important is the essential amino acid content of the protein, the protein hydrolysate or the amino acid mixture itself. Studies on human subjects[1] have repeatedly shown that, if any one of the essential amino acids is lacking, the others are poorly utilized or may be excreted with a resulting "negative nitrogen balance." This phenomenon explains the "poor biologic value" of certain dietary proteins, such as gelatin, which is low in tryptophan, and gliadin of wheat. A recent comprehensive investigation[2] has demonstrated that there is a close mathematical correlation between the biologic value of a protein and the maximum relative percentage deficiency of any one of its component essential amino acids.

Other factors as yet poorly understood adversely affect nitrogen balance in man, as is seen in severe infections,[3] after trauma[4] or following burns.[5] In each of these conditions the negative nitrogen balance due to an excessive loss of nitrogen in the urine may be so severe that extremely large increases in protein intake, orally or parenterally, are required to reestablish nitrogen balance.

One interesting explanation[6] of the negative nitrogen balance suggests that increased amounts of one or perhaps more essential amino acids are required following burns or trauma for the repair of the damaged area or for detoxication. The body is thus "robbed," so to speak, of one or more essential amino acid, and the other amino acids cannot then be utilized and are excreted perhaps after being broken down to urea and other degradation products. In support of this concept the English workers have found that the administration of the essential amino acid methionine to severely burned subjects is followed by a significant increase in nitrogen retention. This interesting observation merits further careful investigation.

RUTIN THERAPY IN HEREDITARY HEMORRHAGIC TELANGIECTASIA

Hereditary hemorrhagic telangiectasia, or Rendu-Osler-Weber disease, is an uncommon but well established clinical entity characterized by multiple telangiectases, hemorrhages and hereditary transmission. Goldstein[1] in 1931 presented a comprehensive review of the literature on the subject, according to which there were some 90 to 95 families and about 500 to 550 persons affected with this condition. Epistaxis is the most frequent symptom, but bleeding from the skin or oral mucous membranes occurs in the majority of patients. The telangiectases usually do not appear before the age of puberty. In the third and fourth decades of life they become more numerous and more subject to hemorrhage. Anemia severe enough to be incapacitating often results from the long continued loss of blood, and a number of fatal hemorrhages have been reported. The frequency of internal bleeding in patients with hereditary hemorrhagic telangiectasia with hematemesis, hemoptysis, melena, hematuria and even cerebral hemorrhages has been emphasized by many authors. The true nature of hereditary hemorrhagic telangiectasia was established in 1901 by Osler, who separated it from the then large group of hemorrhagic diseases of uncertain origin. Weber differentiated the condition from hemophilia by the absence of sex-linked transmission and by the well recognized tendency for epistaxis to be the first manifestation. The two sexes are equally affected, and both males and females may transmit the disease to their offspring. In many families the disease appears to be inherited as a dominant characteristic, but several instances of skipped generations in afflicted families have been recorded.

---

[1] Rose, W. C.; Haines, W. J.; Johnson, J. E., and Warner, D. T.: J. Biol. Chem. **148**: 457 (May) 1943. Holt, L. E., Jr.; Albanese, A. A.; Frankston, Jane E., and Irby, Virginia: Bull. Johns Hopkins Hosp. **75**: 353 (Dec.) 1944.

[2] Mitchell, H. H., and Block, R. J.: J. Biol. Chem. **163**: 599 (June) 1946.

[3] Grossman, C. M.; Sappington, T. S.; Burrows, B. A.; Lavietes, P. H., and Peters, J. P.: J. Clin. Investigation **24**: 523 (July) 1945.

[4] Cuthbertson, D. P.: Lancet **1**: 433 (April 11) 1942.

[5] Taylor, F. H. L.; Levenson, S. M.; Davidson, C. S., and Adams, Margaret A.: New England J. Med. **229**: 855 (Dec. 2) 1943.

[6] Croft, P. B., and Peters, R. A.: Lancet **1**: 266 (March 3) 1945.

[1] Goldstein, H. I.: Goldstein's Heredofamilial Angiomatosis with Recurring Familial Hemorrhages (Rendu-Osler-Weber's Disease), Arch. Int. Med. **48**: 836 (Nov.) 1931.

Boston in 1930 reported 3 cases of the disease with repeated gastric and rectal hemorrhages. The clotting time and the blood platelet count in his cases were normal. Recovery occurred with surprising rapidity even after extensive loss of blood. Renshaw [2] reported the first gastroscopic demonstration of telangiectases in the stomach of a typical case. Rundles [3] reported a case in which repeated nosebleeds had occurred from the age of 14 and in later life gastrointestinal hemorrhages severe enough to produce a severe, incapacitating anemia. Gastroscopy revealed multiple gastric telangiestases. Schuster [4] gave the first complete necropsy report of a case of hereditary hemorrhagic telangiectasia of the familial type. He pointed out that individual groups of dilated vessels are not permanent but rather vary from time to time in their number, size and tendency to bleed, even to the point of disappearing entirely. The frequency of widespread bleeding from many different sources with hemoptyses, melena, hematemeses, hematuria and even cerebral vascular accidents was emphasized in Schuster's necropsy report of the finding of telangiectases in the skin, nose, mouth, pharynx, larynx, trachea, stomach and duodenum.

According to a recent report by Kushlan [5] the literature at present (1946) contains records of some 175 families, with more than 1,000 members afflicted with this disease. He reports a typical case with a definite hereditary history, visible telangiectases and a tendency to bleed from the lesions. Nosebleeds and skin lesions began in childhood. The gastrointestinal hemorrhages began in the fourth decade. The chronic anemia resulting from the constant loss of blood was well controlled with oral iron therapy even after two episodes of severe gastrointestinal hemorrhage. The most recent gastric hemorrhage appeared to create a grave situation in spite of the treatment and five blood transfusions. At this point Kushlan gave his patient rutin, which he obtained from Griffith, in doses of 40 mg. three times a day. A remarkable change in the character of his patient's bleeding was noted within twenty-four hours after starting him on this medication. His daily epistaxis and bleeding from the gums ceased for the first time since childhood and they have not recurred at the time of this writing. Kushlan expresses the hope that rutin may prove to be a specific remedy in the treatment of hereditary hemorrhagic telangiectasia.

Scarborough [6] in 1939 presented evidence from experments on human subjects to prove the existence of a factor decreasing capillary fragility, this factor being vitamin P. He demonstrated vitamin P deficiency in man and distinguished between the spontaneous gross hemorrhage of scurvy and the spontaneous petechial hemorrhage of vitamin P deficiency. Rutin, which, like vitamin P, is a flavone glucoside, is supposed to have the same properties. According to Griffith [7] it is a constituent of a variety of plants, including tobacco, garden rue, forsythia, elder flowers and violets. Griffith administered rutin to 11 patients with increased capillary fragility for periods varying between twelve and sixteen months. Capillary fragility became normal in 8 of these within two months of beginning medication. Griffith concluded that at least in certain cases rutin appears to have the property of decreasing capillary fragility in subjects in whom this fragility is initially increased.

---

[2] Renshaw, J. F.: Multiple Hemorrhagic Telangiectasis, with Special Reference to Gastroscopic Appearance, Cleveland Clin. Quart. **6:** 226 (July) 1939.

[3] Rundles, R. W.: Hemorrhagic Telangiectasia with Pulmonary Artery Aneurysm: Case Report, Am. J. M. Sc. **210:** 76 (July) 1945.

[4] Schuster, N. H.: Familial Hemorrhagic Telangiectasia Associated with Multiple Aneurysms of the Splenic Artery, J. Path. & Bact. **44:** 29 (Jan.) 1937.

[5] Kushlan, S. D.: Gastrointestinal Bleeding in Hereditary Hemorrhagic Telangiectasia, *Gastroenterology* **7:** 199 (Aug.) 1946.

[6] Scarborough, Harold: Deficiency of Vitamin C and Vitamin P in Man, Lancet **2:** 644 (Nov. 23) 1940.

[7] Griffith, J. Q., Jr.; Couch, J. F., and Lindauer, M. A.: Effect of Rutin on Increased Capillary Fragility in Man, Proc. Soc. Exper. Biol. & Med. **55:** 228 (March) 1944.

Current Comment

SURGICAL TREATMENT OF CONGENITAL CARDIOVASCULAR DEFECTS

Blalock's [1] recent report on 110 surgical interventions for the correction of congenital cardiac malformation extends the feasibility of helping the "blue baby." The operation suggested by Dr. Helen Taussig and developed by Blalock is designed to increase the flow of blood to the lungs and is accomplished by an end to side anastomosis of a systemic artery to one of the pulmonary arteries. This operation will not benefit all patients with persistent cyanosis. It is indicated only in malformations in which the primary difficulty is lack of adequate circulation to the lungs. The types of abnormalities likely to be benefited by the operation, according to Blalock, are the tetralogy of Fallot, pulmonary atresia with or without dextroposition of the aorta and with or without defective development of the right ventricle, truncus arteriosus with bronchial arteries and a single ventricle with a rudimentary outlet chamber in which the pulmonary artery is diminutive. In borderline cases with difficult diagnosis and a hopeless outlook an exploration is advisable, in the course of which the pressure in the pulmonary artery can be measured by using a needle and a water manometer. When the pressure is greater than 300 mm. of water, an anastomosis is not advisable. The anastomosis was successfully performed in 91 patients out of 110, with 16 fatalities or a mortality rate of 18 per cent. The subclavian artery was used in 46 patients, with 4 deaths. The innominate artery was used in 36 patients, with 11 deaths. The end of the carotid was anastomosed to the side of one of the pulmonary arteries in 9 patients. There was 1 death in this group. None of the patients had empyema or mediastinitis. There was no significant interference with the circulation of the arm on the side on which the subclavian artery was sacrificed or used for the anastomosis in any of the patients. Weakness or paralysis of the opposite side of the body in patients in whom the innominate or carotid artery was used either had cleared or was diminishing in all who survived the operation. Although some of the operations were performed too recently to allow an evaluation, Blalock believes that all but 1 of the patients who have survived the performance of an anastomosis are improved. It is believed that the artificial ductus in the remaining patients is patent, although a murmur cannot be heard in at least one of them. Heart failure or Streptococcus viridans endarteritis has not developed thus far in any of the patients. Blalock's studies, together with those of Taussig and of Potts and his associates,[2] recently reported in The Journal, reflect the tremendous improvement in prognosis for many infants with congenital heart disease.

---

[1] Blalock, Alfred: The Surgical Treatment of Congenital Pulmonic Stenosis, *Ann. Surg.* **124:** 879 (Nov.) 1946.

PASTEURIZATION OF MILK

The value of pasteurization of milk in preventing the spread of milk borne disease is now well established. The Council on Foods and Nutrition of the American Medical Association in an official statement says, in part, "The pasteurization of milk is a public health measure. The public should demand pasteurized milk for drinking and the use of pasteurized milk in milk products. The dairy trade should universally adopt pasteurization in the interest of public health. Only pasteurized milk is granted recognition by the Council. There is no cogent evidence that pasteurized milk is significantly inferior nutritionally to raw milk." Progressive city health departments have long required compulsory pasteurization; in 1943 the Boston Health Department succeeded in adopting a regulation putting an end to the sale of raw milk in that city. Now the *New England Journal of Medicine* editorializes[1] with righteous wrath against a recent outpouring on the choice of milk by William Brady, M.D., syndicated health columnist. "Any old milk," according to Brady, "regardless of its source, quality or purity, is made safe for infant, child, invalid or adult by scalding . . ."! Certified milk is Brady's first choice and pasteurized milk, though he appears to have heard of it, is not even his third. This irresponsible pronouncement can only reflect ignorance of or disbelief in modern scientific concepts. William Brady's individual whims and foolish notions about removal of tonsils, injection methods, prevention of infection, the uses of iodine, and a half dozen other subjects, have been circulated by newspapers to the detriment of the public health. Every time he cuts loose, as he seems to do more and more frequently with advancing age, The Journal receives communications from doctors who want to know why something is not done to prevent the perpetration of his fallacies. Their communications might better be addressed to local editors who purchase the column from the syndicates and must therefore be responsible for its appearance in the newspapers they edit.

CAUDAL ANESTHESIA IN OBSTETRICS

Edwards and Hingson[1] reported in 1942 a new *method for relief of pain in childbirth by extradural* introduction of fractional doses of anesthetic substances through the sacral hiatus into the sacral canal. Caudal anesthesia combines, according to the authors, the advantages of Lemmon's spinal anesthesia with the safety, simplicity and effectiveness of the extradural nerve block by using the sacral hiatus approach to the sacral canal and the peridural space. The anesthesia can be continued indefinitely by serial injections of the anesthetic solution at intervals in amounts varying with individual cases. A recent report[2] presents a statistical evaluation of the results of delivery with continuous caudal anesthesia done under the supervision of Drs. Hingson, Vaux and Lull at the Philadelphia Lying-in Unit of the Pennsylvania Hospital. This group of 2,516 mothers delivered of 2,546 infants was compared with the deliveries of 1,000 women during the years 1942 to 1943 at the same hospital under the older methods of delivery. Data regarding the mothers in the two groups indicate that when they came to delivery they were comparable with respect to age, parity, state of health and many other factors that might influence the outcome of childbirth. Metycaine was the drug used for continuous caudal analgesia in 99 per cent of the cases. Of the 2,516 mothers 90.4 per cent received complete relief from pain, 4.3 per cent received partial relief, and in only 5.3 per cent was there failure to obtain relief from pain. There was no evidence of danger to the mothers delivered with continuous caudal analgesia, although one third of them showed a drop in systolic blood pressure during the administration of the drug. The postpartum action of the uterus was better in the caudal than in the control group. There were fewer stillbirths and fewer deaths of infants during the first week of life in the caudal than in the control group. More favorable results for the caudal group were indicated in terms of comfort of the mother during labor and the survival of the infant during the dangerous first week of life.

---

[2] Potts, W. J; Smith, Sidney, and Gibson, Stanley: Anastomosis of the Aorta to a Pulmonary Artery, J. A. M. A **132:** 627 (Nov. 16) 1946.

[1] False Prophet, New England J. Med **235:** 914 (Dec 19) 1946.

---

[1] Edwards, W. B, and Hingson, R. A: Continuous Caudal Anesthesia in Obstetrics, Am J. Surg **57:** 459 (Sept) 1942.

[2] A Statistical Study of Delivery with Continuous Caudal Analgesia, as Compared with Other Methods by Collins, S. D, head statistician, Phillips, Ruth F., statistician, and Oliver, Dorothy S, junior statistician, U. S. Public Health Service, with collaboration of Hingson, R. A., Surgeon, U. S Public Health Service, anesthesiologist; Vaux, N., obstetrician, and Lull, C B, obstetrician, Philadelphia Lying in Unit of the Pennsylvania Hospital, Pub. Health Rep. **61:** 1713 (Nov. 29) 1946.

ORGANIZATION SECTION

Washington Letter

(From a Special Correspondent)

Jan. 23, 1947.

Opposes Transfer of St. Elizabeths to District of Columbia

In vigorous fashion Dr. Winfred Overholser, nationally known superintendent of St. Elizabeths mental hospital, has expressed his opposition to the proposal that it be transferred from the federal government to the District of Columbia for use as a master hospital and welfare center. He said: "I have no enthusiasm, personally, over seeing the hospital transferred to the District as an omnium gatherum, hodge podge bedlam for various city institutions. It would cost the hospital its reputation as a nationally recognized teaching and research institution. It would be a return to the Middle Ages. A calamity." He pointed to slashes in health department budgets and cited the psychiatric ward at Gallinger Municipal Hospital to illustrate what would happen to St. Elizabeths under municipal direction. "An elevator shaft was built years ago when the building was erected, and the city has never yet provided funds for the elevator." Dr. Overholser also criticized the present method of commitment to the hospital through a commission consisting of two psychiatrists and a lawyer. He pointed out that the District of Columbia Medical Society is preparing a bill to provide voluntary admission to St. Elizabeths Hospital for residents of the area.

Proposed New Hospital Center in Nation's Capital

A special committee is studying possible sites for the proposed 20 million dollar District of Columbia hospital center, for which $2,750,000 has been asked in the 1948 budget to buy land and make plans for the center. The committee, composed of representatives of Garfield, Emergency and Episcopal hospitals, government officials and one public representative, must decide which facilities of the three hospitals can be combined in jointly operated units and which can be kept separate. On the committee are Surgeon General Thomas Parran, U. S. Public Health Service; Admiral Ross T. McIntire, former surgeon general of the Navy; Chief Justice Bolitha T. Laws of the District of Columbia; Henry P. Blair, of Episcopal Eye, Ear and Throat Hospital; George A. Garrett, Central Dispensary and Emergency Hospital; William R. Castle, Garfield Memorial Hospital; District Health Officer George C. Ruhland, and others.

Stable Relations Between Government and Research Science Reported by Dr. Bush

Dr. Vannevar Bush, president of the Carnegie Institution of Washington, told guests at a meeting of ten District of Columbia engineering societies that stable relations between government and research science are being developed. He reported that the present year promises to be of great significance in scientific development, and he advocated more clear cut lines of command in agencies sponsoring basic research under the billion dollar a year outlay of the government for research and development. Dr. Bush described the Office of Scientific Research and Development, of which he is director, and the Joint Research and Development Board, which he serves as chairman.

Testimony Favoring Universal Training

The President's advisory commission has reported favorable testimony on universal training to Mr. Truman from Army and Navy leaders, military organizations and the American Legion. The commission was appointed to study the problem and devise a plan of military training. Reports of the final session are awaited. Among those already heard was Major Gen. Norman T. Kirk, Army Surgeon General, who related plans for safeguarding the health of trainees.

Official Notes

A. M. A.-N. B. C. CENTENNIAL BROADCASTS

In celebration of the Centennial year of the American Medical Association, 1947, the twelfth annual series of the A. M. A.-N. B. C. dramatized broadcasts is devoted to features of medical progress in the United States during the hundred years of the existence of the American Medical Association.

For purposes of the broadcast, the United States is divided into twenty-five regions. These regions have been chosen with a view to grouping together states which have similar history and similar general characteristics, such as the four states of the Rocky Mountain region, the two groups of New England states, the Southeastern and the Central Southern groups.

One broadcast is devoted to medical progress in each of these regions, and the twenty-sixth and closing week will deal with the hundred years of the American Medical Association from a nationwide point of view.

The title for the series is "Doctors—Then and Now" and the theme is "A Century of Progress by American Medicine."

The dramatic scripts are written by William J. Murphy, veteran medical script writer responsible for most of the previous A. M. A.-N. B. C. series; production is directed by Norman Felton, director of the two preceding series; Joseph Gallicchio is again directing the N. B. C. orchestra. Arrangements with N. B. C. have been made through the office of Miss Judith Waller, Public Service Director, Central Division, National Broadcasting Company.

The dates for January with topics were announced in a previous issue of THE JOURNAL. The four dates for February with topics are as follows:

February 1.—*Illinois, Iowa;* subject John Evans; the speaker, to be announced, will speak from station WHO at Des Moines.
February 8.—*Maine, Vermont, and New Hampshire;* subject Nathan Smith; speaker to be announced will speak from station WRDO at Augusta.
February 15.—*Idaho, Oregon and Washington;* subject Marcus Whitman; the speaker, to be announced, will speak from station KGW at Portland.
February 22.—*Nebraska;* subject J. A. Waggoner; Dr. Roy W. Fouts will speak from station WOW at Omaha.

. Subsequent programs will be announced as soon as they are ready.

Coming Medical Meetings

Annual Congress on Medical Education and Licensure, Chicago, Palmer House, Feb. 10-11. Dr. Victor Johnson, 535 N. Dearborn St., Chicago 10, Secretary.

National Conference on Rural Health, Chicago, Feb. 7-8. Dr. F. S. Crockett, 535 N. Dearborn St., Chicago 10, Chairman.

American Academy of Orthopedic Surgeons, Chicago, Jan. 25-30. Dr. Myron O. Henry, 825 Nicollet Ave., Minneapolis, Secretary.

Central Surgical Association, Chicago, Feb. 20-22. Dr. Walter G. Maddock, 250 East Superior St., Chicago, Secretary.

Chicago Medical Society Annual Clinical Conference, Chicago, March 4-7. Dr. Willard O. Thompson, 30 N. Michigan Blvd., Chicago 2, Secretary.

Dallas Southern Clinical Society, Dallas, Texas, March 17-20. Dr. Glenn D. Earlson, 1133 Medical Arts Bldg., Dallas, Secretary.

Mid-South Postgraduate Medical Assembly, Memphis, Tenn., Feb. 11-14. Dr. Arthur F. Cooper, 1479 Carr Ave., Memphis, Secretary.

New Orleans Graduate Medical Assembly, New Orleans, Feb. 24-27. Dr. Max M. Green, 1430 Tulane Avenue, New Orleans 13, Secretary.

Pacific Coast Surgical Association, Seattle, Feb. 17-18; Victoria, B. C., Feb. 19-21. Dr. F. L. Reichert, Stanford University Hospital, San Francisco, Secretary.

Council on Medical Service

MEDICAL FACILITIES AVAILABLE IN RURAL AREAS OF THE STATE OF VIRGINIA

A report of the Virginia Advisory Legislative Council to the governor and the general assembly of Nov. 12, 1945 pursuant to senate joint resolution number 16 on the medical facilities available in rural areas of the state has been reprinted and distributed.

The nine member advisory legislative council consisted of Charles R. Fenwick, lawyer, chairman; I. C. Riggin, M.D., state health commissioner, vice chairman; M. M. Long, senator, patron of the resolution; W. E. Garnett, Ph.D., rural sociologist; H. B. Mulholland, M.D., president, state medical society; Phillip S. Smith, M.D., vice president, state medical society; J. M. Emmett, M.D., W. J. Sturgis, M.D., and W. T. Sanger, Medical College of Virginia.

The report includes eight basic recommendations for immediate action and reviews data and information in support of the recommendations made as well as suggested state legislation on "Licensing and Inspection of Certain Kinds of Hospitals."

A brief of the summary basic recommendations for immediate action are:

1. Expansion of public health facilities to include complete coverage of the state by local public health departments.
2. Expanded, correlated hospital and health center systems.
3. Development of the methods of furthering the financing of essential medical care for every one by (*a*) public funds in the amount of 30 cents per capita for the needy; (*b*) prepayment plans for hospital, surgical and medical care.
4. To help to increase the supply of rural doctors through creating loan funds for medical students to be accompanied by a pledge of stipulated service in rural areas.
5. Licensing of hospitals and nursing homes by the state department of health.
6. Providing consultants on hospital location and planning within the state.
7. Creating revolving hospital and health center construction and equipment loan fund with interest at 2 per cent to assist local hospital and health center boards.
8. That the whole problem of medical facilities and that of promotion of needed measures in the field be studied further by a commission.

In discussing the cost of medical care in 1941, reports of approximately 2,400 Virginia rural families gave an average expenditure of $60 a year per family for all types of medical care. About one sixth of these families had medical care bills of more than $100 a year, and nine tenths of the families had some expense for medical care during the year. The report continues:

"Aside from the humanitarian considerations, adequate medical care within the financial reach of rural people is a matter of concern to urban centers as well as to country folk themselves.

"The country is a seed bed from which cities must be constantly replenished. The good health of the workers from rural areas should be a matter of great interest to industrial concerns."

In discussing further patterns of medical practice, the report points out that trends today definitely indicate that a much smaller percentage of medical care will be delivered to the homes of the sick. When people are desperately ill they increasingly seek medical care in a doctor's office, a medical center or a community hospital.

Another trend which is likely to assume even more rapid tempo is the practice of doctors, dentists and technical personnel to associate themselves in groups with advantage both to the patient and to the practitioner.

In discussing medical services, the Council reported that some better method of financing medical services is essential to the improvement of the medical care situation. It believes that plans to this end should be based on the following governing principles: (1) Every one, as far as able, should pay the cost of his medical care; (2) when a family is financially unable to pay for essential medical services, the cost should be borne wholly or in part by the public, thus making real the principle that every one should receive medical and surgical care as an inherent right; (4) the administration of public aid for medical care should, as far as possible, be local; (5) any program for financing medical services should be such as to encourage the medical care essential to positive health; (6) greatly extended use should be made of the insurance principle in connection with payment for medical care; (7) any plan adopted should be sufficiently flexible to be adjustable to an expanding medical care program.

Medical Legislation

STATE LEGISLATION

Colorado

Bill Introduced.—S. 31 proposes to authorize the state board of medical examiners to grant licenses to practice "naturopathy," defined as "the art and science of applied healing forces; thus enabling the physician to prescribe or administer to human trauma or disease by applying any one or more of the physiological, mechanical, electrical, manual, chemical, biological, psychological, or material forces or agencies in restoring a normal state of being, as taught in Naturopathic Colleges." Naturopaths would be prohibited from using the prefix Doctor or Dr. without following his or her name with Naturopathic Physician, Naturopath, or N. D.

Massachusetts

Bills Introduced.—H. 145 proposes to add a new section to the general laws which would authorize a trial court to direct that the complainant, her child and the defendant, in an illegitimacy proceeding, should submit to one or more blood tests to determine whether or not the defendant can be excluded as being the father of the child. The results of such test would be admissible in evidence in cases in which definite exclusion is established. The bill further proposes that refusal to submit to such test may be disclosed on the trial unless good cause is shown to the contrary. S. 26 proposes that any duly registered physician shall be entitled, on application, to the privileges of practicing in, and having his patients admitted to, any public or semipublic hospital or any hospital supported in whole or in part by contributions from the commonwealth or from a city or town or any hospital which solicits contributions for its support from the public. S. 29 proposes the establishment of a hospital planning board of five members, at least two of whom shall be duly registered physicians. This board would be the sole state agency to carry out the purposes of the federal hospital survey and construction act. S. 47 proposes that whoever experiments or operates in any manner whatsoever upon any living dog or cat for any purpose other than the healing or curing of said dog or cat shall be punished by a fine of not less than $100 nor more than $500, or by imprisonment for not less than three months nor more than one year, or by both such fine and imprisonment. S. 51 proposes the creation of a board of registration of chiropractors and defines chiropractic as "the science of locating, and removing, by hand only, interference with the transmission or expression of nerve force in the human body, and the correction of misalinement or subluxations of the vertebral column. It excludes operative surgery, prescription or use of drugs or medicine, or the practice of obstetrics, except that the x-ray may be used solely for the purpose of examinations; chiropractor is defined who lawfully practices chiropractic." The proposal would prohibit a chiropractor from using in connection with his name any term other than "Registered Practitioner of Chiropractic" and would require annual registration of each licentiate.

North Dakota

Bill Introduced.—H. 23 proposes regulations for the licensing of maternity homes for unmarried mothers and, in connection therewith, proposes that every birth occurring in such a home shall be attended by a legally qualified physician, if available, otherwise by a registered nurse until the services of a legally qualified physician may be obtained.

Tennessee

Bill Introduced.—H. 20 proposes to repeal the 1943 law creating a board of naturopathic examiners. The purpose of this proposal is to prevent the practice of naturopathy in Tennessee.

GOVERNMENT SERVICES

ARMY

ARMY APPEALS FOR MORE NURSES

Appointment of three hundred nurses who have not had prior military service in the Army of the United States in the grade of Second Lieutenant has been authorized by the War Department. Because of the acute shortage of nurses authorization for additional nurses will be made as soon as 80 per cent of the quota is filled. The appointment will be for the duration and six months thereafter, or for a period of eighteen or twenty-four months. There is no provision for appointments in the Regular Army Nurse Corps until legislation is enacted to establish the corps for peace time operations; however, nurses accepting temporary appointment in the Army of the United States will be considered for transfer to the Regular Army provided they qualify.

Graduate registered nurses under 34 years of age, single or widowed without dependents under 14 years of age and in good physical condition who are interested in army nursing should apply for application blanks to the Surgeon General's Office, Pentagon Building, Washington 25, D. C.

NEW DIRECTOR OF ARMY INSTITUTE OF PATHOLOGY

The Surgeon General has announced the appointment of Col. Raymond O. Dart, M. C., as director of the Army Institute of Pathology, Washington, D. C., to succeed Col. James E. Ash recently retired. Colonel Dart served about eight years before the war at the Army Medical Museum and Army Institute of Pathology and in all has practiced pathology for more than twenty-five years.

Colonel Ash, who was director of the Institute of Pathology for the past nine years, is now the scientific director of the American Registry of Pathology, which is a major department of the institute and which is sponsored by the Division of Medical Sciences of the National Research Council.

GENERAL MacARTHUR REPORTS ON HEALTH CONDITIONS IN JAPAN

In his October report General MacArthur stated that the nationwide program for the immunization of 17,000,000 children in Japan against diphtheria was continued, that Asiatic cholera was considered eradicated in Japan and also no longer a quarantine problem, that the incidence of typhoid had declined and that a venereal disease control program aimed at educating the entire Japanese population had been initiated. Two more factories had been approved for the manufacture of penicillin during October, and 80 per cent of Japanese bombed out dentists had been restored to practice. Progress in the direction of medical reform continued with the formation of a Medical Practitioners State Examination Inquiry Committee, the appointment of twenty-two physicians as medical school inspectors, and the appointment of new members to the council for the reorganization of the Japan Medical Association.

ARMY MEDICAL EXHIBIT OPEN TO PUBLIC

The Army Medical Department Exhibit which had its premier showing at the annual session of the American Medical Association last June in San Francisco, was opened to the public January 6 in the Museum of National History of the Smithsonian Institution, 10th and Constitution Avenue N.W., Washington, D. C. This, the first public showing of the exhibit, will close January 27. It has been shown to medical audiences in Philadelphia, Cleveland, Detroit and Miami. The entire field of medicine is represented in this exhibit. Fully assembled, it covers half the area of a football field and requires three railroad freight cars when in transit.

ARMY AWARDS AND COMMENDATIONS

Major General Norman T. Kirk

Major General Norman T. Kirk, Surgeon General of the Army, was awarded the Legion of Merit on Dec. 6, 1946 in a ceremony in the Pentagon. Major Gen. Henry S. Aurand, formerly commanding general of the Sixth Service Command, made the presentation. The citation read as follows: "Major Gen. Norman T. Kirk rendered exceptionally meritorious service as commanding officer, Percy Jones General Hospital, from June 15, 1942 to April 13, 1943. His conspicuous performance as an organizer, administrator and professional surgeon culminated in the establishment of the country's largest Army Hospital Center, which has been unexcelled for eminent achievement in military medicine."

Lieutenant Colonel Joseph L. Goldman

The Army Commendation Ribbon was recently awarded to Lieut. Col. Joseph L. Goldman, M. C., A. U. S., of New York. "As chief of the ear, nose and throat service at William Beaumont General Hospital," said the citation, "Lieutenant Colonel Goldman planned and organized his ward and clinic so as to render meritorious service to an exceedingly heavy patient load, with limited personnel, maintaining patient welfare at the highest level. By his masterful integration of clinical material, operative schedules and didactic periods, Lieutenant Colonel Goldman gave instructions advancing the professional knowledge of the Regular Army Medical Corps officers. . . . His services reflect great credit on the Medical Corps of the United States Army." Dr. Goldman graduated from the Long Island College of Medicine, Brooklyn, and entered the service Aug. 11, 1942.

Lieutenant Colonel Wilfred Bloomberg

The Legion of Merit was recently awarded to Lieut. Col. Wilfred Bloomberg, M. C., A. U. S., of Cambridge, Mass., for meritorious service as psychologic examiner and consultant in neuropsychiatry, Office of Surgeon, First Service Command, from July 1942 to August 1945. By his professional knowledge and loyal devotion to duty, states the citation, he was responsible for the establishment of psychiatric methods and standards of induction which became the model for the entire country. His wise counsel was instrumental in restoring to duty or returning to useful civilian life the majority of psychiatric casualties treated in these hospitals and materially aided the nation's war effort. Dr. Bloomberg graduated from Harvard Medical School, Boston, in 1928 and entered the service July 10, 1942.

Lieutenant Colonel Arthur P. Long

The Legion of Merit was recently awarded to Lieut. Col. Arthur P. Long, M. C., A. U. S., of Needham, Mass., who was the director of the Epidemiology Division, Office of the Surgeon General, from April 1941 to August 1945. He actively participated in the formulation of the Army's program of military preventive medicine, and his meritorious achievements, which significantly contributed to the maintenance of low infectious disease rates in our armed forces, were especially mentioned in the citation. Dr. Long graduated from the State University of Iowa College of Medicine, Iowa City, in 1934 and entered the service May 23, 1942.

Lieutenant Colonel Francis R. Dieuaide

The Legion of Merit was recently awarded to Lieut. Col. Francis R. Dieuaide, M. C., A. U. S., of Boston, who served as chief, Tropical Disease Treatment Branch, Office of the Surgeon General, during the period February 1943 to September 1945. The citation attributed the splendid record of the Medical Department in the effective treatment of tropical diseases in large part to his professional skill, able direction and loyal devotion to duty. Dr. Dieuaide graduated from Johns Hopkins University School of Medicine, Baltimore, in 1920 and entered the service Nov. 1, 1940.

VETERANS ADMINISTRATION

PROPOSED CANCER HOSPITAL IN CHICAGO

At a conference of cancer specialists, Veterans Administration officials, U. S. Army engineers and architects in Chicago January 5 first plans were drafted for the proposed Veterans Administration cancer hospital on the campus of Northwestern University. The hospital, which is the only veterans' hospital being planned for cancer treatment and research, will have a capacity of 600 beds and probably an additional capacity for 200 outpatients.

Among those who attended the conference were Col. H. E. Brown, representing the Veterans Administration; Col. W. E. Jeffrey, representing the chief of army engineers; Col. W. P. Trower, district engineer; Dr. Curtis F. Burnam, chief of staff of the Kelly clinic, Baltimore; Drs. J. Roscoe Miller, Loyal Davis, John S. Gray and William B. Wartman, all of Northwestern University Medical School; Dr. A. C. Ivy, vice president of the University of Illinois; Dr. Henry N. Pratt of Memorial Hospital, New York; Dr. P. R. Copeland of the Veterans Administration and Dr. N. C. Trauba, clinical director of the Veterans Hospital, Hines, Ill.

POSTGRADUATE PROGRAM SUCCESSFUL

The program for post graduate studies inaugurated a year ago on an experimental basis at Yale University School of Medicine, New Haven, Conn., has proved highly successful in filling in the gaps in the research work and hospital training of the younger men of the medical profession service with the armed forces. The seventy students in the course are enrolled under the G. I. Bill of Rights and one-half of them are staying on for a second year of advanced study, according to Francis G. Blake, Dean of Medical Schools. They are all working in specialized fields of medicine. There are no formal entry periods because of the different times when the medical officers are discharged from the service. They are merely enrolled in the course provided that there are vacancies at the time of their discharge, and their work begins immediately. The course will continue as long as demand for it exists.

BIDS FOR NORTH DAKOTA HOSPITAL REJECTED

Army engineers have rejected all bids on the proposed Veterans Administration hospital at Minot, N. D., the War Department has announced. The low bid on this 150 bed hospital was $3,927,000 as compared with the government estimate of $3,128,190. Steps will not be taken to readvertise for bids on this hospital until a decision is reached on the bid for the hospital at Grand Junction, Colo., which is almost identical with the Minot design. The low bid however on the proposed Grand Junction hospital was $3,463,800 as compared with the government estimate of $2,910,000. Army engineers are negotiating also with the low bidders on the Peekskill, N. Y., proposed hospital, which was $23,739,409 as compared with the government estimate of $19,185,119. These three hospitals were all designed by the construction service of the Veterans Administration.

EXPERIMENTS AND TRAINING IN MAKING PROSTHESES

Clinics at which eligible veterans may be fitted with new plastic eyes or have repairs and alterations made to those they are wearing are in operation in eight cities over the country. Later the clinics will be expanded to include fitting and repairs for plastic noses, ears and hands. Clinics are in operation in Boston, New York, Atlanta, Cleveland, Chicago, Los Angeles, San Francisco and Baltimore. Similar clinics will be opened in Memphis, Tenn.; Dallas, Texas; Minneapolis; Denver; Portland, Ore., and at the army's Valley Forge Hospital, Phoenixville, Pa., when this installation is transferred to the Veterans Administration.

In order to supply the latest prostheses of this type, experiments are being carried out at the University of Maryland. A training school to acquaint Veteran's Administration doctors and technicians with progress in the experiments and to train them in the art of building the prostheses will be conducted at the University of Maryland School of Medicine opening early in January. Specialists from over the country will attend.

PUBLIC HEALTH SERVICE

EXAMINATION FOR THE REGULAR CORPS

A competitive examination for appointment in the Regular Corps of the U. S. Public Health Service in the grades of Assistant Surgeon (First Lieutenant) and Senior Assistant Surgeon (Captain) will be held at various times and in various cities between February 4 and March 17.

Regular Corps appointments are permanent in nature and provide opportunities to qualified physicians for a life career in one or more of a large number of fields including research, general hospitals, special hospitals, foreign duty and federal, state and local public health programs. Assignments are made with all possible consideration of the officer's demonstrated abilities and experience. There is an ample opportunity for professional growth and development.

All applicants must be at least 21 years of age and citizens of the United States, must present a diploma of graduation from a recognized medical school and satisfactorily pass a physical examination performed by Public Health Service officers when directed on successful completion of the oral and written examination.

Applicants for the grade of Assistant Surgeon must have had at least seven years of educational and professional training or experience, exclusive of high school. Applicants for the grade of Senior Assistant Surgeon must have had at least eleven years of educational and professional training or experience, exclusive of high school.

Application forms may be obtained by writing to the Surgeon General, U. S. Public Health Service, Washington 25, D. C. These should be retained and presented to the board at the time the applicant appears for the oral examination.

Entrance pay for an Assistant Surgeon with dependents is $3,811 a year and for Senior Assistant Surgeon with dependents, $4,351 a year. Promotions are at regular intervals up to and including the grade of Medical Director, which corresponds to full Colonel, at $8,551 a year. Retirement pay at age 64 is $4,950 a year. Full medical care including disability retirement at three-fourth's pay is provided.

EXAMINATIONS FOR THE APPOINTMENT OF NURSES

Examinations will be held in twenty-one cities throughout the country during February and March for the appointment of nurses to the first three grades of the Regular Commissioned Corps of the U. S. Public Health Service. The positions open are in the grades of Junior Assistant Nurse Officers, comparable to the rank of 2d lieutenant in the Army; Assistant Nurse Officer (1st lieutenant) and Senior Assistant Nurse Officer (captain). Any registered nurse who is a citizen of the United States and has a diploma from a state accredited school of nursing connected with a hospital maintaining a daily census of not less than 50 patients may take the examination provided she is at least 18 years old and a graduate of an accredited high school. Preference will be given to graduates with degrees. Graduates for Assistant Nurse Officer must have these qualifications and also must have been out of school at least seven years, the intervening time having been devoted to educational and professional experience, and they must also have an academic degree or have served at least four years in the Public Health Service, or the Army or Navy Nurse Corps.

MEDICAL OFFICERS RELEASED BY THE NAVY

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

Alabama

Blalock, John B................Marion
Burke, Daniel W. Jr...........Mobile
Griffin, Belton G............Birmingham
Hutchinson, Henry H. Jr...Montgomery
Mintz, Harvey H...............Mobile
Schilleci, Vincent J...........Bessemer
Singleton, George W. F..........Selma
Ward, James A. Jr.........Birmingham

Arizona

Barrett, Robert S..............Phoenix
Davis, James W...............Tucson
Ellery, Sidney W., Jr............Miami
Wadell, William R..............Tucson

California

Barbour, Donald C............Oakland
Celestre, Carmelo C.......San Francisco
Cox, Thomas J............San Raphael
Davis, Henry L.......Huntington Park
Dempsey, Edmund V......San Francisco
Draper, Fred H.............Marysville
Elmendorf, Thomas N..........Willows
Flippen, James H. Jr......San Francisco
Gobar, Robert F..............Fullerton
Gray, Percival A. Jr......Santa Barbara
Harter, Gordon B.............Modesta
Huntington, Robert S.....San Francisco
Jessup, Charles H.............Martinez
Keeley, Robert E.............Coronado
Krueger, Albert P............Berkeley
Luz, Lester A.................Oakland
Macauley, James H..........Hollywood
Miner, Delbert L...........Los Angeles
Neufeld, Otto J............Los Angeles
Olson, William J..............Crockett
Packer, George L.........Beverly Hills
Rupp, John J............Santa Barbara
Sanfillipo, Philip R..........Campbell
Siemens, John C.............King City
Smiley, Stanley J...........Sacramento
Thomas, Marcel P.........San Francisco

Colorado

Button, John J................Denver
Connor, Joseph J..............Denver
Lewis, Robert C. Jr.............Denver
Pattee, James J. Jr..............Pueblo
Stjernholm, Thomas...........Denver
Truscott, Robert W............Salida
Warhauser, Frederick B.........Denver

Connecticut

Canzonetti, Andrew J......New Britain
Coolidge, John C..........New Haven
Edelberg, Herman...........Middleton
Gualtieri, Michael V.........Waterbury
Hoff, Ebbe Curtis...........New Haven
McGaughey, James D. III..Wallingford
Standard, John E............Waterbury

Florida

Farrior, John L.................Tampa
Hitchcock, Edgar E............Orlando
Lamb, Samuel A...........Jacksonville
Losner, Irving....................Miami
Rutter, Joseph H........Daytona Beach
Scheinberg, Peritz..................Miami
Winchester, Walter H..........Dunedin

Georgia

Brown, Robert J............Statesboro
Cheek, Pratt Jr.............Gainesville
Huie, Robert E. Jr..............Albany
Lambert, Herman J. Jr...........Macon
Nippert, Philip H...............Atlanta
Parrott, Jesse L...............Hahira
Stead, William W..............Decatur
Turner, August B...............Atlanta
Turrentine, Paul E............Douglas

Illinois

Cluskey, Donald J............Brimfield
Cornille, Alfred J..............Chicago
Forrette, Clarence J. Jr.........Chicago
Grant, Harry E.................Easton
Howard, Henry S................Peoria
Johnson, Chester D...........E. Moline
Kravitz, Harvey................Chicago
Langstaff, James H. Jr.........Fairbury
Mathewson, Raymond G.......Evanston
Meadows, William R..............Elgin
Murrin, Frank H.............Oak Park
Nelson, Harold H...............Peoria
Pellicore, Raymond S...........Chicago
Perry, Robert B................Lincoln
Putman, Harrison C. Jr..........Canton
Ramsay, Samuel W............Chicago
Schaffber, Fenton..............Chicago
Scully, George F...............Chicago
Smith, James C. Jr.............Chicago
Weishaus, James...............Chicago
Weiss, Manuel B...............Chicago

Indiana

Bibler, Lester D...........Indianapolis
Covalt, Wendell E..............Muncie
Kohlstaedt, Karl C........New Augusta
McGaughey, William M.......Greencastle
Polhemus, Warren C............Carmel
Reed, Joseph C..............Rochester
Unger, Loring L..............Farmland

Massachusetts

Brewer, Robert DuB. Jr........Bingham
Cafarella, Joseph J.............Malden
French, Gordon N.......Newton Center
Goldman, Joseph................Medford
Havemeyer, William F..........Groton
Kennedy, Arthur P..............Lowell
Kincus, Francis A...........Middleboro
LaRochelle, Frederick T.....Springfield
Partington, Philip R...Great Barrington
Quartarone, Santo S..........Lawrence
Ritzman, Thomas A.........Cambridge
Scott, Oliver K............Framingham
Seccareccio, James F.........Lawrence
Varjabedian, Anthony........Worcester
Wallace, Edward P.......Newton Center

Michigan

Atkinson, Allie K..............Wayne
Busard, John M..............Muskegon
Frey, James L..........Highland Park
Green, James D................Detroit
Horning, Edward D.............Detroit
Kretzschmar, John C............Detroit
MacMeekin, James W..........Saginaw
Meredith, Paul A..................Caro
Polmeteer, Frank E.......Traverse City
Riker, John L...........Traverse City

Minnesota

Broders, Albert C. Jr.........Rochester
Dummer, Jerome M.............Fairfax
Henry, Earl W..............Nopeming
Johnson, Aldridge............Greenbush
Murphy, Michael E............Keewatin
Peterson, Floyd R...........Minneapolis
Sadler, William P. Jr.......Minneapolis
Solhaug, Samuel B. Jr......Minneapolis
Trimingham, Hugh G. L......Rochester
Watson, Percy T. Jr...........Fairbault

New Jersey

Areson, Robert H.......upper Montclair
Benzenberg, H. C. Jr.....W. Englewood
Guinther, John P.............Hoboken
Harrington, Lee Jr.............Trenton
Roberts, Allison H............Newark
Schmidt, Frederick K.........Plainfield
Turner, Howard G. Jr..........Summit

New York

Addington, Charles H.........E. Aurora
Amsterdam, Harvey J.........Brooklyn
Baddour, Richard A....Long Beach, L. I.
Crowley, Ralph M....Kew Gardens, L. I.
Dean, George A...............Fairport
Gewertz, Julian..............New York
Gilbert, Michael L..........Long Island
Hering, Alexander C..........Mt. Kisco
Johnson, John H..............Brooklyn
McTague, Harry P............Brooklyn
Marino, Daniel J..............Brooklyn
Nelson, Robert L............New Berlin
Pallas, William C...........Jamestown
Rothman, Stanley D.........New York
Salzman, Emanuel.............Brooklyn
Schaeffer, Alan M......Haddon Heights
Schloerb, Paul R..............Kenmore
Svigals, Chester S...........New York
Thorngate, George III...........Alfred
Voorhees, Philip H.............Jamaica
Walsh, William R............New York
Westermann, John J. III......New York
Williams, Raymond M..............Rye
Wood, Milvin N..........Canandaigua
Zeigman, Herman M..........Brooklyn

Oregon

Buckley, James Everett........Portland
Crowell, Dean P..............Coos Bay
Dyer, Harold L............Grants Pass
Gallion, Charles S. M...........Midland
Meienberg, Leo J.............Portland
Miller, Donald B..............Portland
Nudelman, Phillip L............Portland
Reiner, Walter C...............Portland
Sheehy, William R.............Portland

Pennsylvania

Baier, Joseph C...........Williamsport
Bisel, Harry F...............Pittsburgh
Durante, Raphael H........Philadelphia
Farmer, Thomas W...........Lancaster
Loss, Charles H...............Pittsburgh
McAfoos, John A.............Pittsburgh
Peters, Robert J.............Masontown
Pillmore, George U.........Philadelphia
Stone, Eugene Theodore R......Reading
Thomas, George P. Jr....Nesquehoning

South Dakota

Feeney, Robert.............Sioux Falls
Hohm, Paul H..................Huron
Morgan, Richard K.........Sioux Falls

Texas

Castle, Charles W...............Troup
Evans, Edward L...............Dallas
Gleckler, William J............Sherman
Mast, Clarence S. Jr...........Lubbock
Neighbors, Allan H. Jr...........Austin
Smith, Ralph C.................Dallas
Thompson, Hardy E. Jr...........Leona

Washington

Baker, Emory F...............Spokane
Berard, William P...............Seattle
Goldenberg, Samuel..............Ilwaco
Munns, Edward J............Bremerton
Nace, Fay M..................Tacoma
Rosen, Theodore................ Seattle
Tardif, Ernest J.................Seattle

West Virginia

Covey, William C. Jr............Beckley
Fankhauser, Russell L.......Pine Grove
Hess, Dowe S................Shinnston
Marquis, John N...............Beckley
Randolph, Edward B.........Lost Creek
Riggs, Millard M...........Huntington
Shinn, Adam L................Fairmont

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education and public health.)

CALIFORNIA

Edward Rogers Appointed Dean of School of Public Health.—Dr. Edward S. Rogers will take over his duties as dean of the University of California School of Public Health in February. Dr. Roberts has been assistant commissioner in the New York State Department of Health. He is a native of Boston and a graduate of Harvard Medical School and Johns Hopkins School of Hygiene and Public Health. Dr. William McD. Hammon, who has served as acting dean, will continue as faculty member.

First Francis I. Proctor Lecture.—The first Francis I. Proctor Lecture in Ophthalmology was given at the University of California Medical School, Berkeley-San Francisco, by Dr. Kenneth Swan, University of Oregon Medical School, Dec. 20, 1946 on "Some Contemporary Concepts of Pharmacology and Toxicology of the Cornea." The yearly lecture was recently established at the school by a $20,000 gift from Mrs. Francis I. Proctor in memory of her husband, who it is said induced Noguchi to make his studies in trachoma and through whose generosity and determination the confirmation of the etiology of trachoma was made possible. It was Dr. Proctor's interest in furthering ophthalmology in the Western part of the United States that resulted in the establishment of this lecture on the Pacific Coast.

CONNECTICUT

Personal.—Dr. John D. Booth, Danbury, has been appointed a member of the Connecticut Medical Examining Board to fill the vacancy caused by the death of Dr. Daniel C. Patterson.——Dr. William Bowers Smith, formerly chief medical officer for the Connecticut Selective Service System, has been appointed surgeon general with the rank of colonel on the military staff of Governor-Elect James L. McConaughy. A reserve medical officer since 1924, Dr. Smith has for many years been flight surgeon of the Connecticut Department of Aviation.——A farewell testimonial dinner was given to Dr. Michael A. Kinsella and his wife, Dr. Gertrude C. J. Kinsella, practicing physicians in New Britain for many years, on their announced retirement from active practice. They will make their home in Florida.——Dr. Elias Pratt, after fifty-six years of medical practice in Torrington, has presented his resignation as city health officer and school and city physician, posts which he has filled for many years. Dr. Pratt also has served as president to both the Connecticut State Medical Society and the Litchfield County Medical Association. He will make his home with his son in Essex.

ILLINOIS

Galesburg Army Hospital Leased to State University.—The War Assets Administration on January 10 approved the leasing of the former U. S. Army Mayo General Hospital, Galesburg, to the University of Illinois for use as a branch. The university had taken over the hospital last fall under an interim permit and has been holding classes there for several hundred students. The leased property includes 155 acres and 128 buildings constructed by the government during the war at a cost of $4,546,659. The 116 connected one story buildings used for classrooms can accommodate 2,000 students; the other buildings are used for infirmary, recreation, mess hall and laundry buildings.

Training Program for Public Health Physicians.—The Illinois Department of Health, Springfield, has developed a training program in order that the needs of the state for trained and experienced public health physicians may be more adequately met. Individuals interested in entering this program should apply to the director of the Department of Health. Appointees are selected by a committee on the basis of qualifications after a personal interview. Appointments are made through the Civil Service Commission. Persons who successfully complete the training agree to remain in public health work in Illinois for at least two years. Applicants must be citizens of the United States preferably not more than 35 years of age, graduates of an approved medical school, with at least one year of rotating internship and licensed to practice or eligible. The training period is divided into an orientation phase and an academic phase, the former consisting of at least six months of practical field service and the latter of one year of training in a postgraduate school of public health. After successfully completing both phases of the training program the individual is eligible to take the Illinois Civil Service examination for Public Health Physician I or II and is qualified for appointment as health officer or assistant health officer in a county or city health department. During the orientation period trainees not yet licensed to practice medicine receive $250 per month and licensed physician trainees receive $310. During the academic training period each trainee receives $310 per month plus tuition and cost of transportation to and from school.

Chicago

Tuberculosis Societies to Hear Dr. Barach.—At a meeting of the Chicago Tuberculosis Society and the Tuberculosis Institute of Chicago and Cook County, Friday, January 31, Dr. Alvin L. Barach, Columbia University College of Physicians and Surgeons, will discuss "Physiological Therapy in Respiratory Diseases" with special reference to recent developments in the treatment of pulmonary tuberculosis and pulmonary emphysema. John S. Gray, Ph.D., professor of physiology, Northwestern University Medical School, Chicago, and Dr. Andrew C. Ivy, vice president, University of Illinois College of Medicine, Chicago, are scheduled to present discussions following the lecture.

Cancer Symposium.—Forty physicians representing Illinois medical societies attended a symposium on cancer conducted by the Illinois Division of the American Cancer Society here January 20-24. Lectures, conferences and clinics at the University of Illinois, Northwestern University, University of Chicago, Loyola University, Michael Reese Hospital and Mercy Hospital made up the program. The symposium, part of the cancer societies' program of professional education, was arranged by Drs. Warren H. Cole, University of Illinois College of Medicine; Alexander Brunschwig, University of Chicago School of Medicine; Loyal Davis, Northwestern University Medical School; Herbert E. Schmitz, Loyola University School of Medicine, and John A. Rogers, the society's executive medical director in Illinois.

Lack of Sanitation in Restaurants and Taverns.—It appears in a report for the Chicago and Cook County health audit that investigators from the U. S. Public Health Service recently made a sampling survey of Chicago restaurants, cafeterias and taverns. The eating and drinking places in Chicago were given a rating of only 31.5 out of a possible 100 points under the Public Health Service standards. These findings were based on representative samplings of permanent or fixed establishments, of which Chicago has about 17,000. Chicago hospitals, on the basis of a few sampled, rated even lower than restaurants. Among the sections of the report are the following:

> Ninety-nine per cent of the establishments surveyed violated the item pertaining to disinfection of dishes and utensils; that item pertaining to back-siphonage into water supplies, and the item covering garbage disposal methods.
>
> Ninety-eight per cent violated the item pertaining to the cleaning of dishes and utensils; 98 per cent were deficient in items pertaining to toilet facilities, and 93 per cent violated the item pertaining to the cleaning of equipment.
>
> Antiquated dish washing equipment was found in establishments scattered throughout the city, indicating that little attention had been directed to applying modern methods and technics to an age old job. Water temperatures were frequently below the required 170 degrees, and chlorine concentrations sufficient to kill germs left on utensils, cups and glasses . . . were often absent. The wiping of dishes and glasses, an unnecessary operation when the disinfection water is hot enough, generally were done with dirty towels.
>
> The practice of permitting perishable foods, such as cooked meats, cream pies and salads, all excellent mediums for bacterial multiplication, to remain at room temperatures and exposed to contamination . . . was most noticeable. "It is quite obvious," the report said, "that the restauranteurs recognize the value of window dressing for the public benefit." Elaborate and ornate appointments were obvious in many establishments, while in the kitchens vermin and filth were found.

The remedies for these insanitary conditions were said to include revamping of the city code and increasing the food inspection staff of the Chicago Health Department and improvement in the methods of hospitals.

MARYLAND

Appoint Radiologist for Johns Hopkins Hospital.—Dr. Russell H. Morgan, former associate professor of radiology at the University of Chicago, has been named professor in the newly created department of radiology at Johns Hopkins University, Baltimore, and will also serve as radiologist in chief at Johns Hopkins Hospital. Formerly a section of the division of surgery, radiology has been made an independent department of the two institutions in order to provide better clinical service to the hospital, improve instruction in the university and promote research in the field.

MASSACHUSETTS

Hospital Sponsors Evening Lectures.—Dr. Samuel A. Levine, Harvard Medical School, Boston, gave the opening lecture in a series presented under the sponsorship of the Council of the House Officers' Association of Boston City Hospital January 7. His subject was "Cardiac Arrhythmias and the Use of Quinidine."

Massachusetts Medico-Legal Society.—The midwinter meeting of the Massachusetts Medico-Legal Society will be held February 12 in Magrath Library of Harvard Medical School, Boston at 2:30 p. m. Under problems of procedure Dr. Timothy Leary, Boston, will discuss "Circumstances in which the filing of an incomplete 'under investigation' death certificate may be desirable." Dr. Leroy T. Stokes, Haverhill, will speak concerning "Reimbursement of undertakers for transportation of bodies and use of mortuary facilities." "When and how a medical examiner should report a death for inquest" is the subject of a discussion by Dr. David C. Dow, Cambridge. There will also be four short reports of cases.

MICHIGAN

Physicians Cited for Volunteer Service.—At the annual meeting of the Ingham County Medical Society, Lansing, in December 1946, 54 members of the society were awarded medals with citations for at least two years of volunteer service as examining physicians or medical advisers to the selective service system during the last six years. The presentations were made by Brig. Gen. LeRoy Pearson, director, state selective service system. Dr. Franklin L. Toost, Holt, president of the county society, presided and Dr. Robert S. Breakey, Lansing, president-elect, later assumed the presidency of the society.

Annual Hospital Clinic Day.—Mount Carmel Mercy Hospital, Detroit, will hold its annual clinic day January 29. Among the morning speakers will be Dr. Willard Owen Thompson, professor of medicine, University of Illinois College of Medicine, Chicago, whose subject will be "Glandular Disturbances of Childhood." Dr. Richard W. TeLinde, professor of gynecology, Johns Hopkins University School of Medicine, Baltimore, will address the clinic on "Tumors of the Female Genital Tract," and Dr. Leland S. McKittrick, professor of surgery, Harvard Medical School, Boston, will speak on "Peptic Ulcer, Surgical Management." A luncheon will be served at 12:30 p. m. and an evening banquet is scheduled at the Book-Cadillac Hotel.

NEBRASKA

Changes in Health Officers.—Dr. Howard C. Stewart, Franklin, Tenn., has been appointed health officer of Lincoln to succeed Dr. Leroy L. Fatherree, who resigned to take a similar position in Omaha.

Dr. Miner Heads Counselor District.—Dr. H. R. Miner, Falls City, was elected president of the southeast Nebraska counselor district of the Nebraska Medical Society at its December meeting in Beatrice, the first to be held in four years. The district is made up of Nemaha, Johnson, Pawnee, Gage and Richardson counties. Its next meeting will be held in Falls City in May.

NEW YORK

Expanded Tuberculosis Program.—Of approximately 10,000 state employees in Albany, 8,519 have received free chest x-ray examinations and of 8,218 roentgenograms thus far interpreted 25 indicate active tuberculosis. Dr. Robert E. Plunkett, Troy, head of the state tuberculosis control program, said that with few exceptions these cases of tuberculosis were newly discovered. This illustrates, he said, the value of this type of case finding.

Cancer Teaching Day.—A number of authorities on cancer addressed physicians in Rensselaer County at a cancer teaching day, December 12, at Troy under the auspices of the Medical Society of the County of Rensselaer, Tumor Clinic Association of the State of New York, Medical Society of the State of New York and the division on cancer control of the New York State Department of Health. Drs. Ranald E. Mussey, Troy, president of the county medical society, and Clement J. Handron, Troy, chairman of the society's legislative committee, presided.

Rehabilitation Hospital for Spastic Children.—A rehabilitation hospital for spastic children which would serve as a pilot plant for investigation and treatment of cerebral palsy for the state and nation will be established by the University of Rochester School of Medicine and Dentistry in cooperation with the New York State Health Department and the National Foundation for Infantile Paralysis. Governor Thomas E. Dewey has included in his 1947 budget message to the New York state legislature an appropriation of $150,000 for annual operating cost of the proposed clinic. In addition, a five year program under a $292,000 grant in aid was made to the university last July by the National Foundation for Infantile Paralysis for basic research in both cerebral palsy and infantile paralysis. Mr. and Mrs. Ernest L. Woodward, LeRoy, have offered the university a $500,000 estate of more than 50 acres in LeRoy, including a spacious residence that will accommodate about 40 patients from 2 years of age and up and a staff of forty to forty-five full and part time personnel. Cost of converting the building into a hospital facility will exceed $50,000, part of which Mr. and Mrs. Woodward will provide. The LeRoy project is planned as a model and a center for training for the various types of personnel concerned with the treatment and care of cerebral palsy patients. Opportunity will be provided for training in research at the University of Rochester School of Medicine and Dentistry, hospital care at the LeRoy unit and physical and occupational therapy. The research program is under the direction of Dr. R. Plato Schwartz, associate professor of orthopedic surgery in the Rochester Medical School. Dr. Alan Valentine, president of the university, has entered into negotiations with the state of New York regarding state financial support to cover the cost of operation of the proposed clinic over a stated period of years. Dr. Edward S. Godfrey, state health commissioner, and other advisers of Governor Dewey have worked closely with representatives of the university in planning the undertaking. Trustees of the university have offered all its pertinent resources and a special committee appointed by Dr. George H. Whipple, dean of the School of Medicine, to supervise the basic science and clinical research program. While emphasis would be placed on spastic cases, the similarity of spasticity of muscles in infantile paralysis will lead, it is hoped, to improved methods of treating victims of the latter disease in acute, convalescent and chronic stages.

New York City

Medical Center Receives Grant.—A grant of $150,000 from the New York Foundation has been received by the chairman of the $15,575,000 campaign for the New York University-Bellevue Medical Center. One-half the amount is to be applied toward the work of the new Institute of Rehabilitation and Medicine.

Women's Association Awards Medal.—A medal was presented to Dr. Elise D. S. L'Esperance, head of a cancer clinic in the New York Infirmary for Women and Children, and of a similar clinic in Memorial Hospital for the Treatment of Cancer and Allied Diseases. The medal is the 1946 award of the American Women's Association and was presented at a dinner held by forty-four business and professional women's groups.

Annual Maimonides Lecture.—The annual Maimonides lecture under the auspices of the Clinical Society of the Beth El Hospital will be presented February 13 at 8:30 p. m. at the Jewish Sanitarium and Hospital for Chronic Diseases, Rutland Road and East 49th Street, Brooklyn. The lecturer will be Dr. Chester S. Keefer, Boston, chairman of the committee of chemotherapy and other agents of the National Research Council, speaking on "Antibiotics in Clinical Medicine."

Free Cancer Detection Clinic.—Under the sponsorship of the Brooklyn Cancer Committee and with the cooperation of Dr. Edward M. Bernecker, commissioner of hospitals, a free cancer detection clinic was opened Nov. 16, 1946 in the Brooklyn Cancer Institute. The new clinic accepts only well persons. During its first week more than 250 persons requested examination, 50 per cent of whom qualified as to health and financial eligibility. Dr. Hyman I. Teperson, Brooklyn, is director of the clinic.

Notes from the Annual Report.—Some highlights of the annual report of the New York City Health Department include the following: More babies were born during 1946 than during any previous year in the city's history with both infant and maternal death rates making new all time lows; the lowest death rate in the city's history was recorded for whooping cough; the 1946 tuberculosis death rate was less than 42 per hundred thousand of population, less than the 1945 record; for the fifth successive year there was an increase in reported cases of infectious venereal diseases; approximately one half of all deaths were among persons over 60; although infantile paralysis increased throughout the country, New York City did not have an unusual number of cases.

NORTH CAROLINA

Grant for Research on Quinine.—The School of Medicine of the University of North Carolina, Chapel Hill, has accepted a grant from the Cinchona Products Institute, New York, for continuation of the work of Edwin P. Hiatt, Ph.D., on the effects of quinine and other cinchona alkaloids on renal function and blood pressure.

Course in Mycology.—Duke University School of Medicine and Hospital, Durham, will offer a month's course in medical mycology during July. The course is designed to provide a working knowledge of human pathogenic fungi. Emphasis will be placed on the practical aspects of the laboratory as an aid in helping to establish a diagnosis of fungous infection. Work with patients, clinical material, cultures and laboratory animals will serve as a basis for this course. The number of applicants will be limited, and applications will be considered in the order in which they are received. The course will be under the direction of Dr. Norman F. Conant, to whom inquiries should be addressed. The fee for the course will be $50, and on completion a suitable certificate will be awarded.

PENNSYLVANIA

Another Hundredth Anniversary.—The hundreth anniversary of the Northern Medical Association was observed Dec. 5, 1946, at a dinner meeting in Philadelphia. Dr. Richard K. Shryock, professor of American history, University of Pennsylvania, gave the main address on "The Status of the Physician: 1846-1946." The association, second oldest medical society in Philadelphia, was founded Dec. 5, 1846. The centennial committee is composed of thirty living ex-presidents.

Students of Buenos Aires Honor Dr. Jackson.—Dr. Chevalier L. Jackson, chief of the bronchoscopic department of Temple University Hospital, Philadelphia, was the recent recipient of a gold medal for his work in training South American physicians and surgeons. The medal was presented by the Argentine ambassador to the United States on behalf of the students at the University of Buenos Aires, where Dr. Jackson is an honorary faculty member, before two hundred members of the Pan American Association of Philadelphia.

Philadelphia

Personal.—Dr. Francis C. Grant, professor of neurologic surgery, University of Pennsylvania School of Medicine, addressed the Summit Medical Society, Akron, Ohio, Dec. 3, 1946, on "The Surgical Treatment of Pain."

Dr. Engel Appointed Clinical Professor.—Dr. Gibson Colby Engel was appointed professor of clinical surgery at the University of Pennsylvania Graduate School of Medicine, Dec. 20, 1946. Dr. Engel also serves as chief of Surgical Service B at Lankenau Hospital and at Children's hospital of the Mary K. Drexel Home; is a trustee of the Medical Society of the State of Pennsylvania and district medical officer for the Medical Service Association of Pennsylvania. He is a graduate of Johns Hopkins University School of Medicine, Baltimore, 1926.

TEXAS

Appoint Director of Cancer Hospital.—Dr. Randolph L. Clark Jr., Jackson, Miss., has been appointed director of the M. D. Anderson Hospital for Cancer Research in the Texas Medical Center, Houston. Dr. Clark has been on the surgical staff of the Mayo Clinic and consultant in surgery at the Mississippi State Charity Hospital, Jackson, and the Mississippi State Tuberculosis Sanatorium. He was also director of the department of surgery, AAF School of Aviation, Randolph Field, Texas, and was chief of the surgical service AAF Technical Training School.

WEST VIRGINIA

State Association Approves Proposed Legislation.—The council of the West Virginia State Medical Association has approved the enactment of legislation transferring full medical supervision of state mental and tuberculosis institutions from the board of control to the state health department. The council went on record as favoring the continued administration of the fiscal affairs of these institutions by the board of control. The council recommended the merger of city and county health units and the establishment of additional units in every county or group of counties in the state, the reorganization of the department of public assistance so as to make it possible for county offices to remain open twenty-four hours each day so that medical and hospital care for the indigent sick may be authorized promptly, and the continuance of the two year medical school at West Virginia University and the construction of modern buildings as soon as materials are available. The council advocated the enactment of a bill licensing hospitals.

WISCONSIN

Appoint Professor of History of Medicine.—Dr. Irwin H. Ackernecht has been appointed to the staff of the University of Wisconsin School of Medicine, Madison, as professor of the history of medicine. Dr. Ackernecht comes from the staff of the American Museum of Natural History, New York. Born in Stettin, Germany, in 1906, he received his degree of doctor of Medicine at the University of Leipzig in 1931 and came to the United States in 1941 as a research fellow at the Institute of the History of Medicine, Johns Hopkins University. He has contributed extensively to the literature concerning the history of medicine, and his articles have been published in German, French and English.

GENERAL

Ophthalmology Directory.—The American Board of Ophthalmology has announced that it will publish a directory of certified specialists to Jan. 1, 1947, the arrangement to be alphabetical and geographic. No biographic material will be included. Certified specialists who have not already done so should notify the American Board of Ophthalmology, Cape Cottage, Maine, stating their names and addresses exactly as they wish them listed.

Appointment of Research Director of Foundation for Infantile Paralysis.—Harry M. Weaver, Ph.D., acting director of research for the National Foundation of Infantile Paralysis, has been made director of research for the organization. Mr. Weaver is a graduate of Ohio State University, Columbus, and was an instructor in Wayne University College of Medicine, Detroit, from 1938 to 1942, when he was appointed assistant professor of anatomy.

Literary Guild Extends Its Deadline.—The Physicians' Literary Guild, an organization devoted to the nonmedical writings of doctors, has extended its deadline from January 2 to March 15 for entries in its next literary exhibition to be held at the time of the annual session of the American Medical Association in Atlantic City in June. All entries should be submitted to Dr. Francis Redewell, 526 Flood Building, San Francisco. The guild was organized in January 1946 (THE JOURNAL, March 16, 1946, p. 728) and held its first exhibition in San Francisco at the time of the American Medical Association meeting there last July (THE JOURNAL, Aug. 10, 1946, p. 1234).

New Sponsor for Occupational Therapy Magazine.—*Occupational Therapy and Rehabilitation*, for twenty-five years the official organ of the American Occupational Therapy Association, begins 1947 publication under sponsorship of the Williams and Wilkins Company, Baltimore. It will be devoted to the scientific reporting of the applications of occupational therapy and to the advances in rehabilitation and will be written primarily for and by physicians. Dr. William Rush Dunton Jr., one of the founders of the magazine, has retired as editor, and Dr. Sidney Licht, New York, has been appointed editor. Dr. Licht is a graduate of New York University College of Medicine, 1931.

Society of Vascular Surgery.—A small group met recently in Cleveland to form the Society for Vascular Surgery. Its purpose is to pool and disseminate knowledge pertaining to a subject which requires much integration from the fields of physiology, biochemistry and other basic sciences. The first meeting will be held in Atlantic City, N. J., preceding the annual session of the American Medical Association and will consist of an all day program with papers in the morning and a panel discussion in the afternoon. Officers of the new society are Drs. C. W. Alton Ochsner, New Orleans, president; Emile F. Holman, San Francisco, vice president, and J. Ross Veal, Washington, D. C., secretary.

Conference of Teachers of Clinical Radiology.—Reinstatement of the conference of Teachers of Clinical Radiology, discontinued during the war years as an annual affair, has been made by the announcement of the fourteenth annual conference meeting February 8 at the Palmer House in Chicago. The meeting will precede the Annual Congress on Medical Education and Licensure by two days. The morning session, beginning at 9:30, a round table discussion on undergraduate teaching of radiology, will be headed by radiologists prominent in the field of undergraduate teaching. The subject of the afternoon session will be postgraduate training of residents in radiology, which will be discussed by leaders of the field and be followed by a discussion period. The conference will close with a banquet Saturday evening, at which Dr. Edward H. Skinner, president, will preside.

Prize for Paper on Glaucoma.—The National Society for the Prevention of Blindness announces that papers submitted for the glaucoma prize of $500 offered in 1944 did not conform to the criteria set up by the ophthalmologic committee selected to award the prize. Therefore the prize is again offered for the most valuable original paper adding to existing knowledge in regard to the diagnosis of early glaucoma or the medical treatment of noncongestive glaucoma. The criteria may be secured by writing to the National Society for the Prevention of Blindness, 1790 Broadway, New York 19. Papers may be presented by any practicing ophthalmologist of the Western Hemisphere and may be written in English, French, German, Italian, Spanish or Portuguese. Those written in any of the last four languages should be accompanied by a summary in English. Closing date for receipt of papers is December 1947.

Premedical Conference at Louisville.—Alpha Epsilon Delta, national honorary premedical fraternity, is planning a regional conference on premedical education in cooperation with the University of Louisville for February 21-22. The program will include one session on the basic sciences and another on the social sciences and humanities in relation to premedical and medical education. It will bring together members of the faculties of the more than 100 colleges and universities in Indiana, Illinois, Kentucky, Michigan and Ohio and the members of the admissions committees of the eleven approved medical schools in these states for a discussion of problems of mutual interest. The large enrolment in the colleges of veterans who are desirous of preparing for the study of medicine and the great need for early guidance of all premedical students present problems which need serious consideration. Educators interested in attending this conference should write Dr. Hugh E. Setterfield, Ohio State University School of Medicine, Columbus 10, for further details.

Fellowship for Study of Internal Secretions.—The Ayerst, McKenna and Harrison Fellowship of $2,500, authorized by the Council of the Association for the Study of Internal Secretions at its 1946 meeting in San Francisco, will be presented for the first time at the 1947 annual meeting of the association in Atlantic City. The stipend may be renewed at the discretion of the committee on awards. Applicants for the fellowship must (1) possess the degree of doctor of philosophy or doctor of medicine or their equivalent, (2) present evidence of scientific ability as attested by studies completed or in progress and/or the recommendation of responsible individuals, (3) submit a program of proposed study, (4) indicate one or more institutions where the proposed program shall be carried out, (5) submit statements of approval from investigators with whom they propose to conduct their research and (6) serve full time if awarded a fellowship. A small amount of time may be allotted for course work or for participation in teaching, the latter purely on a voluntary basis.

International Epidemiologic Reporting Service.—The United Nations Relief and Rehabilitation Administration announced on January 3 that the current volume of its bimonthly bulletin marks the cessation by that organization of an international epidemiologic reporting service which henceforth will be carried on under the auspices of the Interim Commission of the World Health Organization. The notification of reported cases of plague, cholera, yellow fever, smallpox and other serious communicable diseases has been carried on by UNRRA through forty-five issues of the Epidemiological Information Bulletin. UNRRA has shipped during the last two years 125,000 tons of medical and sanitation supplies and this was only 60 per cent of the program. The remaining 40 per cent will be dispatched early in 1947 as part of the 600 million dollars worth of relief and rehabilitation goods still to be delivered by UNRRA. Dr. Wilbur A. Sawyer, for two and a half years director of the Health Division for UNRRA and formerly director of the International Health Division of Rockefeller Foundation, said that "it is with deep satisfaction and high expectations that the officers of the Health Division hand over their duties. At the same time they wish to express their gratitude to all those officials and organizations that have cooperated with them in this important venture in international health." The World Health Organization will continue aid to needy countries for training health personnel and in the control of tuberculosis, malaria and other diseases. Consulting doctors, nurses and other health personnel will remain as part of the UNRRA operating staff in China through March and with the displaced persons in Europe through June 1947.

LATIN AMERICA

New Medical Journal.—*Cadernos Cientificos,* the official organ of the Instituto Pasteur of Lisbon, recently appeared. Headquarters are the Instituto Pasteur de Lisboa, Rua Nova do Almada, 69.-1., Lisboa, Portugal.

Hospital News.—The Hospital de Enfermedades de la Nutricion in Mexico City was opened to the public October 12. Speakers included Dr. Salvador Zubiran, head of the hospital; Dr. Gustavo Baz, secretary of public health and public assistance of Mexico, and Manuel Avila Camacho, divisionary general, the president of Mexico.

Special Society Elections.—Dr. Edgard Magalhaes Gomes was elected president of the Brazilian Society of Cardiology during its recent meeting in Belo Horizonte. Other officers include Dr. Octavio Magahlaes, vice president; Dr. Roberto Mexenes de Oliveira, general secretary; Dr. Rinaldo Chiaverini, second secretary, and Dr. Luiz Murgel, treasurer. Correspondence should be addressed to the society of Sociedade Brasileira de Cardiologia, Av. Mem de Sa 197, Rio de Janeiro, D. F., Brazil.

Congress of Neurosurgery.—The second South American Congress of Neurosurgery will be held at Santiago, Chile, April 21 to 27, 1947. Among the subjects discussed will be (1) hydrocephalus, (2) histology of brain tumors in relation to clinical findings and (3) brain abscess. The meeting is sponsored by the Chilean government, which will grant free visas to those who wish to attend. Efforts are being made to obtain special travel rates. The registration fee is eighteen United States dollars. For further information write to Dr. Carlos Villavicencio, Institute of Neurosurgery and Neuropathology, Casilla 70 D, Santiago, Chile.

Argentine Psychologist to Study in the United States.—Dr. Horacio J. A. Rimoldi, director, Institute of Psychology, and professor of biology, University of Cuyo, Mendoza, Argentina, is visiting the United States at the invitation of the Department of State. He plans to spend a year at the University of Chicago in advanced training and research in the Psychometric Laboratory. Dr. Rimoldi, a graduate of the Faculty of the Science of Medicine of Buenos Aires, spent two years in England and did postgraduate work at Oxford. He is the founder and director of the Experimental Institute of Psychology of the University of Cuyo.

FOREIGN

Edinburgh Election.—At the annual meeting of the Royal College of Physicians of Edinburgh, Scotland, December 5, Dr. David M. Lyon was reelected president. Drs. William D. D. Small, Leybourne S. P. Davidson, James D. S. Cameron, Henry L. Wallace, Ian G. W. Hill and David K. Henderson were elected to form the council of the college for the coming year.

Cholera in India.—The government at New Delhi, India, has announced that cholera has taken a heavy toll. In the United Provinces, the announcement said, 263 deaths were recorded in the week ended December 14. Bihar province reported 257 deaths the preceding week and Bengal 672 deaths in the last week of November, although they dropped to 61 the following week.

CORRECTION

Amnesia During Parturition.—In the article by Dr. Volpitto in THE JOURNAL Dec. 28, 1946 the statement of composition at the top of the second column of page 1060 should have read "Each cubic centimeter of this dilution contains 0.025 Gm. (3/8 grain) of pentobarbital sodium and 0.000064 Gm. (1/1000 grain) of scopolamine hydrobromide."

Marriages

GAYLORD A. HART, Dallas, Texas, to Mrs. Anne Colcough Longfellow in Lamar, S. C., September 29.

EVERETT MEADE BAKER, Pittsburgh, to Miss Betty Elaine Humbert of Confluence, Pa., October 30.

DAVID M. CRAIG, Minneapolis, to Miss Carol Jean Harrin of Batesville, Ark., September 17.

JOHN JOSEPH COFFEY, Clayton, Mo., to Miss Roberta Jean Treece of Kirkwood October 26.

WILLIAM HILDEBRAND JR. to Miss Martha Jane Weaver, both of Buffalo, September 7.

Deaths

Stewart H. Welch ⊕ Birmingham, Ala.; born in Uniontown, Ala., Dec. 23, 1881; Cornell University Medical College, New York, 1907; specialist certified by the American Board of Pediatrics; member of the American Academy of Pediatrics; chairman of the pediatric section, Southern Medical Association; past president of the Jefferson County Medical Society and the Alabama State Pediatric Society; served as assistant city health officer and as secretary of the Jefferson County Board of Censors; formerly associate professor of pediatrics at the Birmingham Medical College; for many years on the staff of the Southern Pediatric Seminar at Saluda, N. C.; pediatrician in charge of department, American Cast Iron Pipe Company; on the staffs of the Children's Hospital, Hillman Hospital, South Highlands Infirmary and Baptist Hospital, West End and Highland branches; consultant pediatrician at the St. Vincent's Hospital; died Nov. 8, 1946, aged 64, of carcinoma of the lung.

John A. McGlinn, Philadelphia; born in Philadelphia in 1871; Medico-Chirurgical College of Philadelphia, 1899; member of the American Medical Association; past president of the Philadelphia County Medical Society and of the Philadelphia Obstetrical Society; past vice president and fellow of the American Gynecological Society; served during the Spanish American War and World War I; captain in the medical corps of the U. S. Naval Reserve; formerly associate professor of gynecology at the Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania; served on the staffs of Fitzgerald-Mercy Hospital in Darby, Pa., St. Agnes Hospital, St. Joseph Hospital, St. Vincent's Hospital for Women and Children, Philadelphia General Hospital, St. Luke's and Children's Medical Center and the Graduate Hospital of the University of Pennsylvania, where he died Nov. 29, 1946, aged 75, of coronary disease and hypertension.

William Ledlie Culbert ⊕ Miami, Fla.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1888; specialist certified by the American Board of Otolaryngology; member of the American Laryngological, Rhinological and Otological Society; fellow of the American College of Surgeons; an Affiliate Fellow of the American Medical Association; member of the New York Academy of Medicine; formerly practiced in New York City, where he was on the staff of the Manhattan Eye, Ear and Throat Hospital and on the consultant staff of the Hospital for Special Surgery, the Mary McClellan Hospital, Cambridge, and the Sharon (Conn.) Hospital; died in Miami Beach, Nov. 18, 1946, aged 82, of acute pyelonephritis and hypostatic pneumonia.

Samuel Barbash ⊕ Atlantic City, N. J.; Medico-Chirurgical College of Philadelphia, 1905; since 1939 a member of the New Jersey Board of Medical Examiners, serving as president in 1941-1942; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; twice president of the Atlantic County Medical Society; member of the New Jersey State Pediatric Society, Philadelphia Pediatric Society, American Heart Association and the American Congress of Physical Therapy; medical director of the Atlantic City Hospital; died Nov. 14, 1946, aged 62, of coronary thrombosis.

Enga Mitchell Arnold ⊕ Houston, Texas; University of Texas School of Medicine, Galveston, 1907; served as vice president of the Harris County Medical Society and past president of the Houston Eye, Ear, Nose and Throat Society; served overseas during World War I; on the board of the Veterans Administration; on the staffs of the Hermann Hospital, Methodist Hospital, St. Joseph's Hospital and the Southern Pacific Hospital, where he died Nov. 1, 1946, aged 64, of heart disease and hypertension.

Jesse Oscar Bailiff, Mullens, W. Va.; Chicago College of Medicine and Surgery, 1914; member of the American Medical Association; served during World War I and as a member of the state legislature; died Nov. 3, 1946, aged 61, of hypertension.

John A. Bauer, Columbus, Ohio; Ohio Medical University, Columbus, 1894; member of the Columbus Academy of Medicine; died in the Mount Carmel Hospital Nov. 21, 1946, aged 83, of bronchopneumonia and rheumatic heart disease.

Edwin P. Becton ⊕ Greenville, Texas; University of Tennessee Medical Department, Nashville, 1902; past president of the Hunt County Medical Society; served as a member of the state board of medical examiners; vice president and director of the Greenville National Exchange Bank; medical director and owner of the Dr. E. P. Becton Hospital; died recently, aged 68, of hypertension and arthritis.

Clifton LeRoy Belding ⊕ Itasca, Ill.; Northwestern University Medical School, Chicago, 1911; on the staff of the Bethany Home Hospital, Chicago; formerly professor of ophthalmology at the Illinois Post-Graduate Medical School in Chicago; died Nov. 11, 1946, aged 61, of coronary thrombosis.

Bernard John Bertram, Algoma, Wis.; Marquette University School of Medicine, Milwaukee, 1937; member of the American Medical Association; interned at St. Mary's Hospital in Milwaukee; served as president of the Algoma Junior Chamber of Commerce and as director of the Chamber of Commerce; died Oct. 30, 1946, aged 34, of melanosarcoma.

Walter Clinton Bisson, Charleston, Ill.; Chicago Homeopathic Medical College, 1903; served in France during World War I and as postmaster of Charleston; died Oct. 1, 1946, aged 71.

M. L. Bridge, Van Buren, Ind.; Rush Medical College, Chicago, 1896; served on the staff of the Marion (Ind.) General Hospital; died Nov. 3, 1946, aged 76, of cerebral hemorrhage.

Cyril Joseph Byrne, Lowell, Mass.; Middlesex College of Medicine and Surgery, Waltham, 1936; found dead in bed, Nov. 12, 1946, aged 38.

Allen Vincent Carl ⊕ Danville, Pa.; Medico-Chirurgical College of Philadelphia, 1909; served during World War I, as Danville borough school physician and as medical director of Montour County; died in the Geisinger Hospital Nov. 20, 1946, aged 62, of coronary occlusion.

Henry D. Champlin, Fort Myers, Fla.; Homeopathic Hospital College, Cleveland, 1882; Cleveland College of Physicians and Surgeons, 1899; served as professor of nervous diseases at the Cleveland Medical College and on the staff of the City Hospital in Cleveland; died Nov. 13, 1946, aged 93.

Ray E. Dean, Three Rivers, Mich.; Hospital College of Medicine, Louisville, Ky., 1907; on the staff of the Three Rivers Hospital; died Nov. 4, 1946, aged 67, of coronary thrombosis.

Grace Dewey, Jacksonville, Ill.; Johns Hopkins University School of Medicine, Baltimore, 1903; served as secretary of the first board of trustees of the Morgan County Tuberculosis Sanatorium; one of the founders of the Morgan County Tuberculosis League; first woman trustee of Illinois College, where she was a member of the board at the time of her death; served on the staff of Passavant Memorial Hospital, where she died Nov. 24, 1946, aged 83, of heart disease.

Fred Counselman Dilley ⊕ Brazil, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1898; past president of the Clay County Medical Society; served during World War I and as secretary of the city board of health; on the staff of the Clay County Hospital; died Nov. 2, 1946, aged 70, of coronary occlusion.

Martin Downey ⊕ New York; Bellevue Hospital Medical College, New York, 1893; died Nov. 4, 1946, aged 80, of carcinoma.

Joseph Achille Duclos, Osceola, Wis.; School of Medicine and Surgery of Montreal, Que., Canada, 1898; died Nov. 11, 1946, aged 74, of pneumonia.

William Vincent Flynn, Hudson Falls, N. Y.; Georgetown University School of Medicine, Washington, D. C., 1943; interned at St. Peter's Hospital in Albany; diplomate of the National Board of Medical Examiners; began active duty in the medical corps, Army of the United States, in January 1944 and service terminated in January 1946; killed Nov. 4, 1946, aged 30, in an automobile accident.

James Alexander Gaharan, Olla, La.; College of Physicians and Surgeons, Little Rock, 1909; served for many years as parish coroner; died Nov. 13, 1946, aged 71.

Morris Louis Harris ⊕ Brooklyn; University and Bellevue Hospital Medical College, New York, 1909; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; on the staff of Israel Zion Hospital; served on the staff of Long Beach (N. Y.) Hospital; died Nov. 28, 1946, aged 59, of coronary thrombosis.

Herman Everett Heacker, Oliver Springs, Tenn.; Lincoln Memorial University Medical Department, Knoxville, 1915; served as mayor and on the staff of Harriman (Tenn.) Hospital; died Oct. 30, 1946, aged 60, of heart disease.

Joseph Hubert Horton ⊕ Burnside, Ky.; University of Louisville School of Medicine, 1932; interned at St. Joseph's Hospital in Lexington; past president of the Pulaski County Medical Society; on the staffs of the Somerset City Hospital, Somerset, and the Marymount Hospital in London; died Oct. 14, 1946, aged 45, of coronary thrombosis.

Jesse Burket Howe ⊕ Erie, Pa.; Jefferson Medical College of Philadelphia, 1907; member of the staffs of St. Vincent's and Hamot hospitals; died Nov. 9, 1946, aged 64, of cerebral hemorrhage.

James Alton Humphrey, Monroe, Mich.; the Hahnemann Medical College and Hospital, Chicago, 1908; lieutenant colonel in the National Guard; served during World War I; died Oct. 14, 1946, aged 64, of coronary thrombosis.

Frederick Henry Kuegle, Janesville, Wis.; John A. Creighton Medical College, Omaha, 1905; member of the American Medical Association and the Radiological Society of North America; specialist certified by the American Board of Radiology; served during World War I and on the staff of Municipal Hospital; died Nov. 12, 1946, aged 68, of cardiac failure.

Walter William Lang ⊕ Kalamazoo, Mich.; the Hahnemann Medical College and Hospital, Chicago, 1905; on the staffs of the Borgess and Bronson Methodist hospitals; died Nov. 4, 1946, aged 66, of carcinoma of the stomach.

Martin Liling, New York; Fordham University School of Medicine, New York, 1914; member of the American Medical Association; died Sept. 30, 1946, aged 61.

John Henry Luikart, Moundsville, W. Va.; Ohio State University College of Medicine, Columbus, 1916; member of the American Medical Association; served on the staff of Reynolds Memorial Hospital, Glen Dale; died Nov. 9, 1946, aged 64, of cerebral hemorrhage and chronic interstitial nephritis.

Frank J. Moloney ⊕ Sault Ste Marie, Mich.; Michigan College of Medicine and Surgery, Detroit, 1899; past president of the Chippewa Mackinac Counties Medical Society; for many years industrial surgeon for the Union Carbide Company; served on the staff of the Chippewa County War Memorial Hospital; died in Detroit Nov. 23, 1946, aged 75, of cerebral arteriosclerosis and x-ray burns on the hand.

Ezra Franklin Mertz, Concrete, Wash.; Rush Medical College, Chicago, 1906; member of the American Medical Association; served during World War I; died in Sedro-Woolley Oct. 10, 1946, aged 73, of hypostatic pneumonia following exhaustion from exposure.

William S. Miller, Uniontown, Kan.; American Medical College, St. Louis, 1886; died Nov. 4, 1946, aged 86, of senility.

Alvin Thomas Nelson, Wrangell, Alaska; University of Nebraska College of Medicine, Omaha, 1941; diplomate of the National Board of Medical Examiners; served an internship and residency at the Hurley Hospital in Flint; served a residency at the Henry Ford Hospital in Detroit; served in the medical corps of the Army of the United States from June 1944 to April 1945, when he was relieved from active duty; killed in a hunting accident in October 1946, aged 41.

Asa Burton Nichols, Norwood, Ohio; the Hahnemann Medical College, Chicago, 1895; died Sept. 27, 1946, aged 74, of pneumonia.

Adolph Nicholas Nittler ⊕ Santa Cruz, Calif.; Oakland College of Medicine and Surgery, Oakland, 1909; served as county health officer and as president of the Santa Cruz Hospital; died Oct. 10, 1946, aged 60, of chronic rheumatic endocarditis and chronic parenchymatous nephritis.

Henry O. Ogden, Mechanicsburg, Ohio; Eclectic Medical Institute, Cincinnati, 1903; died in a hospital in Columbus Nov. 17, 1946, aged 73, of pneumonia following an operation.

Robert Child Paine ⊕ Thompson, Conn.; Dartmouth Medical School, Hanover, N. H., 1900; past president of the Windham County Medical Society; served as councilor of the Connecticut State Medical Society; since 1930 president and since 1900 member of the staff of the Day Kimball Hospital, Putnam, where he died Nov. 7, 1946, aged 72, of coronary thrombosis.

Maud Ferguson Pratt, Springbrook, Wis.; Milwaukee Medical College, 1909; formerly connected with the state hospitals in Independence, Iowa, Mendota and various others; died in the Wisconsin General Hospital in Madison, Oct. 28, 1946, aged 74, of peritonitis secondary to ruptured diverticulum of the descending colon.

Lawrence Hort Prince, Kiln, Miss.; Rush Medical College, Chicago, 1885; fellow of the American College of Surgeons; at one time attending obstetrician at the Augustana Hospital in Chicago; formerly associated with the Palmyra Springs Sanitarium in Palmyra, Wis., and the Waukesha Springs Sanitarium in Waukesha; served as school physician for the board of education in Madison and as superintendent of the Wisconsin State School of Dependent and Neglected Children at Sparta; died Nov. 29, 1946, aged 87.

Gustave H. Reinhardt, Mira Loma, Calif.; Washington University School of Medicine, St. Louis, 1907; contract surgeon for the U. S. Army stationed at the Mira Loma Quartermaster Depot; died in Camp Haan (Calif.) Hospital Feb. 5, 1946, aged 65, of coronary thrombosis.

Paul Roth ⊕ Battle Creek, Mich.; American Medical Missionary College, Battle Creek and Chicago, 1904; fellow of the American College of Physicians; member of the American Society of Clinical Pathologists: conducted research on basic and metabolic apparatus; served as chief of laboratories of the Battle Creek Sanitarium, where he died Nov. 7, 1946, aged 75, of cerebral hemorrhage.

Edwin M. Smith Sr. ⊕ Chicago; Chicago Medical College, 1886; on the staff of the Henrotin Hospital; died Oct. 30, 1946, aged 85, of coronary thrombosis.

Benjamin Franklin Suffron ⊕ Dayton, Ohio; University of Cincinnati College of Medicine, 1919; died Nov. 11, 1946, aged 51, of coronary thrombosis.

J. Ernest Taylor ⊕ Latham, Tenn.; (licensed in Tennessee in 1912); died in Murray, Ky., Oct. 13, 1946, aged 61.

Edmund Hershey Teeter ⊕ Jacksonville, Fla.; University of Maryland School of Medicine, Baltimore, 1910; fellow of the American College of Surgeons; on the staffs of St. Luke's and St. Vincent's hospitals; died in Chambersburg, Pa., Nov. 3, 1946, aged 64, of carcinoma of the stomach.

James Isaac Thompson, Yellville, Ark.; Arkansas Industrial University Medical Department, Little Rock, 1892; member of the American Medical Association; died Sept. 11, 1946, aged 88.

Irving Niles Tilden ⊕ Mattapoisett, Mass.; Harvard Medical School, Boston, 1899; past president and vice president of Mattapoisett Improvement Association and a member of its executive committee since its founding in 1904; a trustee of Mattapoisett Public Library; for many years a member of the board of health; served as vice president of Plymouth County Health Association; died in the New England Baptist Hospital, Boston, Nov. 3, 1946, aged 75, of carcinoma of the bladder.

Joseph Patrick Tynan, Boston; Tufts College Medical School, Boston, 1910; died Oct. 10, 1946, aged 62, of congestive heart disease.

William Edgar Van Cleave, McAlester, Okla.; Kentucky University Medical Department, Louisville, 1905; member of the American Medical Association; for thirty-five years connected with the Indian Service, retiring in November 1942; for twenty years superintendent of the Indian hospital at Talihina, where he spent twenty-five years; died in the Albert Pike Hospital, Oct. 23, 1946, aged 69, of coronary thrombosis.

George William Walker ⊕ Cape Girardeau, Mo.; Washington University School of Medicine, St. Louis, 1903; fellow of the American College of Surgeons; served on the board of education; on the staffs of the Southeast Missouri and St. Francis hospitals; died Nov. 13, 1946, aged 70, of myocarditis.

Frank Bryant West, Lothian, Md.; Medical College of Virginia, Richmond, 1926; served during World War I; died in the Emergency Hospital, Annapolis, Nov. 19, 1946, aged 48, of injuries received in an automobile accident.

Henry Walker West, Yates Center, Kan.; Louisville (Ky.) Medical College, 1880; member of the American Medical Association; died Nov. 15, 1946, aged 90, of generalized arteriosclerosis.

Anna Louisa Wilson, Chicago; the Hahnemann Medical College and Hospital, Chicago, 1894; died Oct. 27, 1946, aged 77, of chronic myocarditis.

Roy Edward Wilson ⊕ Denver; Homeopathic Medical College of Missouri, St. Louis, 1897; served during World War I; on the honorary staff of the Presbyterian Hospital; member of the staff of St. Joseph's Hospital; formerly secretary of the Lewis County (Mo.) Board of Health; died Oct. 7, 1946, aged 71, of coronary thrombosis.

Alfred Arthur Womack, Little Rock, Ark.; Meharry Medical College, Nashville, Tenn., 1905; died in October 1946, aged 65.

Cecil Sentell Yarbrough, Auburn, Ala.; University of Tennessee Medical Department, Nashville, 1901; member of the American Medical Association; served as a member of the state legislature and as mayor of Auburn; died October 26, 1946, aged 68, of heart disease.

James Archibald Young, Maysville, Okla. (licensed by years of practice); died in a hospital at Pauls Valley in October, aged 83.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 6, 1947.

Result of the Plebiscite Taken by the British Medical Association

As reported in a previous letter to THE JOURNAL, the British Medical Association took a plebiscite of the whole medical profession, nonmembers as well as members, on the question whether to negotiate or to refuse to negotiate with the government on the National Health Service Act. The result has now been declared. The number of voting forms sent out totaled 56,871½. The voting was 18,972 in favor of negotiation and 23,110 against. Thus 14,589 forms had not been returned, but some are still coming in. The council of the British Medical Association has decided that the majority against negotiation is sufficient to put the following resolution to a special meeting of the Representative Body to be held on January 28: "That the negotiating committee be advised that, in view of the results of the plebiscite, the minister be informed that, because of the divergence between the principles of the profession and the provisions of the National Health Service Act, the committee is unable to enter into discussions on the regulations to be made under the act."

The biggest majority against negotiation came from general practitioners and specialist groups. For general practitioners the figures were 6,375 in favor of negotiation and 11,297 against. The position was reversed among doctors in whole time salaried service: 3,791 for negotiation and 2,021 against. Of the consultants and specialists in England and Wales 1,884 voted Yes and 2,106 No. Doctors in the fighting services voted Yes by 56 to 44 per cent.

The minister of health, Mr. Bevan, has issued a statement to the press that he has learned that the British Medical Association is placing the result of the plebiscite before a special representative meeting with a recommendation that the profession should refuse to discuss the steps to be taken to bring the National Health Service into operation. He hopes that before any final decision is taken accepting this recommendation wiser counsel will have prevailed, and he feels sure that the medical profession will take no steps which would make it difficult for physicians to take part in the comprehensive health service which the people of the country so ardently desire. Meanwhile, he says, he has a clear duty to carry out the instructions of Parliament as expressed in the act, and he can no longer postpone the consultations preliminary to setting up the administrative machinery. He therefore proposes to consult all the many other interests concerned. He is also considering what ought to be done to give the medical profession the opportunity of assisting to shape, and of playing its part in the new service. A struggle between the government and the British Medical Association thus seems imminent.

The Royal College of Surgeons

The report of the Royal College of Surgeons for the first postwar year, 1945-1946, shows the work done in restoration after the destruction due to German bombing. By last June all the anatomic specimens which had been evacuated to dispersal centers had been brought back. Most of them were in good condition, although the dampness had damaged some. But examination of the specimens which had survived bombing of the college revealed great losses which can be made good only by years of heavy work. This work cannot start until the department has been repaired and reequipped.

The work on malnutrition done under Dr. John Beattie, research professor of the college in western Netherlands and Germany, has yielded important results. It was shown that heat loss is regulated by nervous control of the vessels of the skin, while heat production, under conditions of rest, is controlled mainly by the endocrines, which in turn may be influenced by nervous mechanisms. In the conditions of starvation found in western Netherlands the body temperature became stabilized at a low level but the diurnal variations often exceeded the normal. For the optimum rate of growth the calory intake must be constantly related to the nitrogen intake. If the nitrogen intake is doubled, calory intake must also be doubled to conserve as much as possible of the nitrogen. The work in Germany showed that hunger edema is not, as was thought, due merely to hypoproteinemia but apparently results from a specific defect in the kidney due to deficient diet.

NEW ZEALAND ENDOWMENT

A New Zealand industrialist who wishes to remain anonymous has made a gift to the college for the endowment of a "commonwealth traveling professorship." The endowment provides an income of $8,000 a year. A commonwealth professor will be appointed each year and will generally be a physician, surgeon or scientific worker resident in Britain, Australia or New Zealand, but a distinguished teacher from one of the other dominions may also be appointed. The professor will be required to travel to Britain, Australia, New Zealand or any other dominion to assist in the advancement of medical science by lecturing, teaching or research. The president of the Royal College of Surgeons in announcing the gift said that although it had been made to the college the donor wanted representatives of other bodies to help in the appointing. This gift has excited considerable interest and has been described by the prime minister as a munificent and far sighted gesture showing "real appreciation of the needs of medicine, science and the British commonwealth."

Helen Keller Praises the British National Institute for the Blind

Dr. Helen Keller, the deaf and blind authoress whose successful struggle against the disabilities with which she was born is almost incredible, has just completed a visit to this country. In a farewell message to the National Institute of the Blind she stated that Britain was rallying quickly and energetically from its war catastrophe. Full of confidence, she looked to England to be an Elijah to its noble creation the National Institute for the Blind and to pour on it a double portion of its reborn vitality. Having known the institute during almost a lifetime, she dared to say that it shone among the foremost beacons of true civilization. Its story was a magnificent record of unremitting effort to reintegrate the broken lives of the blind throughout the empire and indeed the world.

The Highest Birth Rate for Twenty-Three Years

The improvement in vital statistics often reported in THE JOURNAL during the war continues. The highest birth rate in any quarter since June 1923 is recorded for the September quarter of 1946, when there were 213,135 live births, representing a birth rate of 19.7 per thousand of population. The upward trend shown in the June quarter, when the number of births was 203,797, is thus maintained. The birth rate of 19.7 is 4.1 above that for the third quarter of 1945 and 4.5 above that for the corresponding quarter of 1938, the last complete prewar year. The average for the September quarters of the years 1940-1944 was 15.4.

An Airborne Medical Society

An Airborne Medical Society has been formed. Membership is open to all medical and dental officers who are eligible for membership of the Airborne Forces Club. This, in fact, includes all medical and dental practitioners who are eligible for membership of the Airborne Forces Club, which means all medical and dental practitioners whose work it was or is to go to war by parachute or glider. Quartermasters and transport officers of airborne field ambulances are also eligible. Application forms can be obtained from the honorary secretary, Airborne Medical Society, 63a Belsize Park Gardens, London N. W. 3.

PARIS

(From Our Regular Correspondent)

Dec. 27, 1946.

Fiftieth Anniversary of Pasteur's Death

The celebration of the fiftieth anniversary of the death of Louis Pasteur, organized by the National Union of Intellectuals, has been a great event in France. The representatives of twenty-three countries, invited by the French government, were present; among those were the Professors Miss Bliss, Clark, Cori, Heidelberger, Lipmann, Perrin-Lang, Stanley and Wexman for the United States, Professors Bawden, Bernal, Buttle, Chain, Colonel Brook, Felix, Fildes, Fleming, Florey, Galle, Grieg, Knight, Morgan, Miss Stephenson, Thornton and van Heyningen for Great Britain, and Professors Engelhardt, Pavlovski, Sbarski, Parnas, Judine, Braunstein and Soloviev for Russia. At a solemn sitting of the Academy of Medicine, Roussy, dean of the Paris University, outlined the work of Pasteur, who had been a member since 1873. In an address entitled "Pasteur, a Precursor," Professor Pasteur Valery-Radot, member of the Academy of Medicine and of the institute and grandson of Pasteur, emphasized the driving power of the latter: "It was the most audacious imagination, together with intuition, which is the distinctive mark of genius, to which was associated the will to subject himself to the most patient of work. Thanks to his genius, Pasteur was able to foresee discoveries which came to light years after: filtrable germs, carriers of germs, microbian antagonism." In 1880, in a letter addressed to Dumas, Pasteur wrote "Contrary to the previsions which I just mentioned it could be possible that hens vaccinated against cholera might be refractory to anthrax; this would mean an anthrax immunity created on an animal by means of a parasitic disease of quite another nature. If this result is confirmed, and especially if it extends to other virulent diseases, it will be possible to hope for the most important therapeutic consequences even as regards the pathology of virulent diseases proper to man." A congress of pasteurian sciences was held at the Collège de France from the 19th to the 22d of November and it demonstrated the development of pasteurian ideas in the world. Among others, Professor Engelhardt of Russia spoke on Pasteur's influence regarding the biochemical phenomena, Professor Judine of Russia on antisepsis and asepsis, Professor Galloway of Great Britain on the veterinary diseases, Professor Winge of Denmark on yeasts, Professor da Fonseca of Brazil on tropical diseases, Professor Heidelberger of the United States on immunity, Professor Malenotti of Italy on insect diseases, Stanley of the United States on virus and bacteriophages and Professor Chain of Great Britain on antibiotic substances. In all these addresses the scientists demonstrated that pasteurian ideas were the starting point of numerous discoveries in several fields of medicine and biology. In the course of a ceremony presided over by Professor Joliot-Curie assisted by Jacques Trefouel, director of the Pasteur Institute, and Georges Teissier, director of the National Center for Scientific Research, Jean Painlevé showed his new film on the life of Pasteur. The members of the international congress visited Dôle, native town of the great scientist and where he got the inspiration for his works on fermentation. The periodical *Le Médecin Français* dedicated a special number to Pasteur, in which, among other articles, Trefouel wrote a paper entitled The Pasteur Institute: Realization and Continuation of Pasteurian Thought. "There is a total community of existence between the Pasteur Institute and its associated organizations, the direct continuous relations between the Paris laboratories and those overseas having a twofold interest: The Pasteur Institute receives from our colonies a constant documentation on all questions of interest and maintains a constant liaison between all the colonies, which, in their turn, benefit directly by the acquisitions of the metropolis." Academic and public ceremonies took place at Lyons and Marseilles, where Professors Lipmann, Engelhardt and Sbarski were guests, in Caen with Professor Heidelberger, at Nancy and Strasbourg with Professor Cruz-Coke of Chile and at Bordeaux and Perigueux with Professor Patocka of Czechoslovakia.

The Pasteur Exhibition

An exhibition under the auspices of Unesco was presented at the Palace of Discovery. There were autograph letters, original documents and collections relating to the scientific work of Pasteur; among others on the molecular dissymmetry of natural organic products (1847-1856), fermentation (1857) and the discovery of anaerobia (1861), studies on wine and its diseases, the method of pasteurization (1862-1871), diseases of silkworms and their treatment (1865-1867), theory of germs, anthrax, Vibrion septique (1877-1880), the discovery of vaccine virus (1879-1883) and the discovery of antirabic vaccination. The exhibition showed the revolution stirred up by Pasteur's discoveries in chemistry, industry, agriculture, surgery, medicine and hygiene and, at last, the work done by the nineteen institutes and laboratories overseas from the one of Saigon (created in 1891) to the one of Cayenne (French Guiana), created in 1940.

BELGIUM

(From Our Regular Correspondent)

Dec. 11, 1946.

International Committee of Military Medicine

Attention has been called on several occasions to the scientific and professional activities of the International Committee of Military Medicine. Since the liberation of Europe, this committee has resumed all its activities: the office of documentation, and the central organ of army physicians, of the colonies and of public health, which functions as before 1940. Its bulletin is published regularly. This committee is an intergovernmental organization, founded in 1920 by the Belgian government, to which are affiliated the health services of the armies through the Ministries of Foreign Affairs of each country. Its aim is, in the spirit of the Convention of Geneva and under the sign of the International Red Cross, to maintain and draw closer the bonds of professional collaboration between the men whose mission it is to aid the sick and wounded in the armies.

Since resuming activities, the committee has again contacted more than twenty-two countries, and the Swiss government has decided to call a general meeting in Basel for June 7, 1947. This congress, which is open to all regular and reserve officers of the health services of the armies of land, sea and air, of the colonies and of public health, will take up the following questions: *Methods of Resuscitation of the Wounded* (Reporting countries: France, Great Britain and Yugoslavia); *Prophylactic Procedures Against Epidemic Diseases in Armies* (Reporting countries: United States, Great Britain and Switzerland); *Methods of Evacuation of the Wounded and Sick: Indications and Contraindications* (Reporting countries: Canada, Poland and Union of Soviet Socialist Republics); *Role of Military Physicians in Maintaining the Morale and Physical Condition of Soldiers* (Reporting countries: Belgium, France and Switzerland), and *Study of Methods and Apparatus for Determination of Hydrogen Ion Concentration in View of Their Employment in the Pharmaceutical Laboratories of Armies* (Reporting countries: Brazil, France and Switzerland).

The conclusions on every question will be transmitted to all governments by the committee. Besides these activities, the International Committee of Military Medicine, since 1934, has studied the question of the revision of the International Humanitarian Conventions and their fusion into a single document. As a result of numerous meetings of experts and in the light of new war experiences a preliminary conference has been held in Geneva to study this project. The International Committee of the Red Cross, basing its study on the numerous works of the medicolegal commissions of the International Office of Military Medicine, has prepared a vast project of trying to unify and coordinate all conventions in existence at present.

In the framework of the Office of the United Nations it is evident that an intergovernmental organization such as the International Committee of Military Medicine can render great service by the relations which have been established between armies by the exchange of their health services.

Station of Reeducation and Apprenticeship

Dr. Derscheid presented to the Belgian Society for the Scientific Study of Tuberculosis a discussion of the rehabilitation of tuberculous patients for work, inspired by the results of the school at Marcinelle. A statistical report of 1,679 grave or chronic cases indicated that after sanatorium treatment followed by a period of retraining one third of the patients could resume light or part time work. Sixty-seven per cent of patients with a mild form of the disease improved enough to return home and resumed their former occupation. Of these 91.4 per cent have continued their work after one year. Of the 33 per cent who did not take up their old work and acquired a new occupation, the proportion of those still maintaining themselves after a year was 73.7 per cent. In the readaptation to work the balance is thus in favor of the patients who have resumed their former occupation

Peptic Ulcer and Nutritional Deficiencies

Dauwe in the *Bulletin International des Services de Santé des Armées* presented a study of the frequency of peptic ulcer during the German occupation and found that the number of gastric and duodenal ulcers increased greatly. Statistics of the Service of Internal Medicine of the University of Ghent proved this. He cites the experience of Silbermann, who by inducing an esophageal fistula in dogs produced a severe gastric hypersecretion by a conditioned reflex, and at the same time he prevented food from reaching the stomach. In the same way, repeated injections of histamine into a fasting animal produced gastric hypersecretion. In both conditions ulcers appeared. In case of starvation people find themselves somewhat in the condition produced experimentally by Silbermann. Presumably many people would not have developed ulcer if they could have eaten as usual.

Medical Meeting in Brussels

The twentieth session of the Medical Days of Brussels provided a varied program and was attended by nearly 1,200 foreign and Belgian physicians. Among the chief subjects discussed may be mentioned corneal grafting by Professor Franceschetti of Geneva at the Institute Coppez; the radiologic train of the National Society of the French Railroads; electric shock and psychophysiologic regulations; the work test and the study of its application at the obstetric clinic in Geneva; surgery of the splanchnic nerves; and penicillin.

OSLO

(From a Special Correspondent)

Jan. 8, 1947.

Medical Education in Norway

Long before the outbreak of the war, plans were being discussed for bringing the education of the medical student up to the level of modern requirements. In 1939 the Faculty of Medicine adopted a new plan, but it never materialized owing to the German occupation. Now discussions have been resumed, and on Nov. 20, 1946 there was a full dress debate on the subject at the headquarters of the Norwegian Medical Society in Oslo. One speaker, Professor Johan Holst, urged the speeding up of education from childhood, school to be started at the age of 6 instead of 7, the university to be entered at the age of 17, and the final examinations to be passed at the age of 23. Another speaker pointed out how ill equipped the university is with teachers; while in Sweden there is one teacher to every eight or nine students, in Norway there is only one to every fifteen students. A senior medical student, invited to voice the feelings of his contemporaries, branded as a fundamental evil the intensive cramming which elbows out practical training. The remedies he proposed for this evil included a wider distribution of medical students in various hospital departments, a critical revision of the curriculum and a simplification of the system of marks. He would like to see students housed and fed free of charge in the hospitals they attend and fees for courses and examinations paid by others. Professor Axel Ström gave an account of a recent visit to the United States, with special reference to medical education in this country. The large attendance at this meeting was plain evidence of the great interest taken in the reform of the medical curriculum in Norway.

An Experiment in Dental Hygiene

In 1938 the municipal authorities in Oslo started a health demonstration in the northern quarter of the town with a population of some 70,000. A group of doctors, dentists and nurses, as well as experts in household economy and gymnastics, carried out various activities on behalf of mothers and children. Here reference will be confined to a survey of dental caries based on quarterly examinations of all the children in the district from the age of 18 months to 7 years. They were given a diet planned to eliminate as much as possible easily fermenting carbohydrates likely to promote acid conditions in the mouth. The mothers were also instructed in local dental hygiene. The children were classed in two groups according to whether they had or had not enjoyed the benefits of the health demonstration before they were 12 months old. A comparison showed that dental caries was about 50 per cent less extensive in certain age groups among the children under the influence of the health demonstration than in the control group.

Research into the Nature of Dental Caries

The German occupation of Norway created certain conditions remarkably favorable for the study of dental caries. Not only were there profound changes in the nation's dietary, but the much restricted food supplies were also weighed and measured as never before. The Norwegian Association for the Care of the Teeth has recently offered a prize for the best essay dealing with the causes of the decline of dental caries during the second world war as studied in Norway. It is proposed that the winner shall be awarded the first prize of 3,000 kroner while the runner-up is to receive 2,000 kroner. There are to be three judges, one to be selected by the Faculty of Medicine of the University of Oslo, one by the Norwegian Dental High School and one by the Norwegian Association for the Care of the Teeth. The competition will be closed on September 1.

Bureau of Investigation

MISBRANDED PRODUCTS

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the Federal Security Agency

[EDITORIAL NOTE.—These Notices of Judgment are issued under the Food, Drug and Cosmetic Act, and in cases in which they refer to drugs and devices they are designated D. D. N. J. and foods, F. N. J. The abstracts that follow are given in the briefest possible form: (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the date of shipment; (4) the composition; (5) the reason for the charge of misbranding, and (6) the date of issuance of the Notice of Judgment—which is considerably later than the date of the seizure of the product and somewhat later than the conclusion of the case by the Food and Drug Administration.]

Ademo Tablets.—Ademo Corporation of America, Los Angeles. Shipped between March 2 and June 8, 1943. Composition: Essentially as stated on label, namely: "Formulated from the Active Principle of Violet Ray Treated (Red Blood Cell Building) fraction of Desiccated Raw Liver Extractive, Iron, Special Type Yeast, Concentrated Hemoglobin (Blood Powder), Milk Whey, Chlorophyll, Plus the following for each 6 tablets: H. P. Thiamin (B-1 . . . 1200 I. U. H. P. Riboflavin (B-2 . . . 3000 Micrograms Niacin . . . 10,000 Micrograms Iron . . . 20.24 Milligrams. Also minerals containing trace elements of Calcium, Chlorine, Magnesium, Sulphur, Potassium, Phosphorus and Pantothenic Acid as Naturally found in Yeast and Liver." One lot misbranded because label and accompanying display card falsely represented that preparation would build blood, strength, energy and vibrant health. Another lot misbranded for this reason, and because represented to correct rapid heart beat, infections, neuritis, nerve disease, beriberi, depression, loss of weight, intestinal disorders, pellagra, gingivitis, dermatitis and many other disorders.—[*D. D. N. J., F. D. C. 1122; June 1945.*] Both lots also misbranded under provisions of the law applicable to foods.

Bates Vitamin Preparations.—Bates Laboratories, Inc., Chicago. Shipped between Feb. 2 and March 20, 1943. Composition: government chemists' report indicated that it largely conformed to that represented by the products' names: Bates Natural B Complex, Bates Riboflavin Vitamin B_2 (G), Bates (Thiamine) Vitamin B_1, Bates (Nicotinic Acid) Niacin, Bates (Ascorbic Acid) Vitamin C, Bates Vitamin A & D, and Bates Calcium Pantothenate. All misbranded because accompanying literature falsely suggested that the products, singly or together, were effective treatments for loss of weight or appetite, bleeding gums, nutritional, nervous or skin disorders, indigestion, gray hair, anemia, blindness, atrophy of glands, and many other conditions.—[*D. D. N. J., F. D. C. 1128; June 1945.*] Also misbranded under provisions of the law applicable to foods.

Curley Bu-T-Caps Vitamins.—Curley Distributing Company, Philadelphia. Shipped April 21, 1943. Composition not reported. Misbranded because literature accompanying package falsely represented product as effective in insuring good health, beauty and good complexion, preventing or correcting poor teeth, retarded growth, liver and kidney ailments, body malformation, anemia, neuritis, beriberi, pellagra, certain heart disorders, rickets, scurvy and some other conditions.—[*D. D. N. J., F. D. C. 1123; June 1945.*]

Curley Cal-Pans Vitamins.—Curley Distributing Company, Philadelphia. Shipped April 21, 1943. Composition not reported. Misbranded because literature accompanying package falsely represented that product was effective in preventing graying of hair or restoring natural color to gray hair.—[*D. D. N. J., F. D. C. 1123; June 1945.*]

DPS Formulae.—Dartell Laboratories, Los Angeles. Shipped between March 23 and May 8, 1943. DPS Formula 52 claimed on label to consist of fish liver oil concentrate, wheat germ oil, mixed natural tocopherols, treated linseed oil containing the fatty unsaturates and soya oil containing lecithin. Misbranded because label falsely represented product to be useful in impotency, menopause, anterior pituitary deficiency and tendency to abort. DPS Formula 57 label claimed composition to be fish liver oil concentrate, dehydrated garlic and alfalfa, lac-sulfur and chlorophyll. Misbranded because label falsely represented product as effective treatment for hypertension, toxic conditions and bowel putrefaction. DPS Formula 58 label claimed composition to be powdered kelp, dicalcium phosphate, fish liver oil concentrate, yeast, rice polishings and wheat germ. Misbranded because of label misrepresentations that article would effectively treat lowered fat and protein metabolism, low basal metabolic rate, thyroid deficiency, low calcium metabolism, pregnancy and lactation, obesity, and disorders of the nerves and skin. DPS Formula 61 label gave ingredients as mixed natural tocopherols and wheat germ oil, and falsely represented product's efficacy in sterility, mental dullness, poor skin, weakness of female organs, paralysis, and lack of motility of eye lens. DPS Formula 66 label declared presence of unsaturated fatty oils naturally present in wheat germ oil and fish liver concentrate, besides special high potency vitamin A. Label falsely represented usefulness for sinusitis, catarrh, asthma, colds, otitis media, mucous infections and eye disorders. DPS Formula 81 label declared presence of 2.6 milligrams of the sodium copper soluble salt of chlorophyll, and falsely represented product's efficacy for hypertension, cardiovascular conditions, toxic conditions, impaired cellular respiration, anemias and infections. DPS Formula 100 label declared presence of iron sulfate, desiccated liver, hog stomach substance, pepsin, spleen substance, red bone marrow, kelp, hemoglobin, and vitamins B_1, B_2 and C. Label falsely represented product to be efficacious in anemias, toxic changes in blood, fatigue, low blood pressure, underweight, pregnancy, and some other conditions. DPS Formula 103 label declared that these tablets provided 4,000 International Units of vitamin A, and 5 milligrams vitamin E in a base of these inert desiccated glandular substances: Anterior pituitary, whole ovarian, ovarian residue, and adrenal cortex. Misbranded because label falsely represented product's efficacy for scanty or difficult menstruation, anemia, dysmenorrhea, delayed puberty, delayed menstruation, painful breasts, hot flashes, menopause, ovariectomy and sexual asthenia. DPS Formula 105 label declared presence of I. U. vitamin A and vitamin E in a base of these inert desiccated glandular substances: orchic, prostate, whole adrenal, anterior pituitary and suprarenal cortex. Label falsely represented that product would effectively treat impotency, sterility, lowered sex-tone, apathy and mental lethargy.—[*D. D. N. J., F. D. C. 1124; June 1945.*] DPS Formulae 52, 57, 58, 61 and 100 also declared misbranded under provisions of the law applicable to foods.

DPS Formula 56.—Dartell Professional Service, Los Angeles. Shipped March 26, 1943. Label declared composition to include "Vitamins A, 80,000 USP XI units; Vitamin D, residual amounts as carried with Vitamin A." Product misbranded because falsely represented as effective in nephritis, conjunctivitis, otitis media, kidney stones, eye weakness and some other disorders.—[*D. D. N. J., F. D. C. 1125; June 1945.*]

Floritone.—Manufactured by Vitolectic Food Company, Providence, R. I., and shipped April 12, 1943, by Nature Food Centres, Inc., Providence. Composition: essentially glucose, dextrin and whey powder. Misbranded because label falsely represented that Floritone, taken between meals, would increase weight, and, if taken with meals, would reduce weight, and that when used in large quantities, it would be of benefit in diarrhea and toxemia.—[*D. D. N. J., F. D. C. 1132; June 1945.*]

Genuine O. B. C. Capsules.—William A. Reed Company, Philadelphia. Shipped April 26, May 20 and June 10, 1943. Composition: essentially phenolphthalein, caffeine and clay. Misbranded because of false label representation that the product would effectively reduce weight and because declaration of active ingredients and warnings against use and unsafe dosage or methods or duration of administration were not sufficiently conspicuous.—[*D. D. N. J., F. D. C. 1134 and 1230; June 1945.*]

Hayden's Caramelized Wheat Germ.—Hayden Flour Mills, Inc., Tecumseh, Mich. Shipped May 11, 1943. Misbranded because labeling falsely represented that about 300 pounds of wheat are required to produce one pound of this product; that it would effectively treat constipation, arthritis, retarded growth, gray hair, stomach ulcer, eczema, neuritis, and many other disorders, stimulate the appetite, aid digestion and nerves and produce some other results.—[*D. D. N. J., F. D. C. 1129; June 1945.*] Also misbranded under provisions of the law applicable to foods, as reported in *F. N. J. 5785*.

Hello Minerals.—Gordon Service, Inc., Detroit. Shipped June 7 and July 30, 1943. Composition: seaweed, alfalfa and parsley leaves. Misbranded because (1) name was false and misleading as applied to a mixture of this kind; (2) label claimed that product contained in natural form all minerals known to be essential to nutrition and was especially rich in iron and copper; (3) product was represented to come from the laboratories of an internationally recognized scientist and to supply minerals in amounts sufficient to be of real value, and (4) accompanying literature falsely represented that product, either alone or combined with vitamin B complex, would enrich the blood, soothe the nerves, add energy, repair the body, and produce some other benefits.—[*D. D. N. J., F. D. C. 1131; June 1945.*] Also misbranded under provisions of the law applicable to foods.

Macu Brand Papaya Concentrate.—Macu Fruit Products, Chicago. Shipped April 19, 1943. Composition: papaya pulp and seeds, with sugar. Misbranded because label falsely represented that product, when used as directed, was a rich source of vitamins, a valuable aid to digestion, and helpful in gastritis, diphtheria, ulcers, bowel disorders, dyspepsia, croup, cancer and gastric fermentation.—[*D. D. N. J., F. D. C. 1126; June 1945.*]

Nulfey Tablets.—William A. Reed Company, Philadelphia. Shipped April 26, May 20 and June 10, 1943. Composition: essentially sodium salicylate, sodium biphosphate, methenamine, and plant drugs, including a laxative one. Misbranded because falsely represented in labeling as effective for relief of rheumatism, arthritis, neuritis and sciatica, as well as a diuretic and analgesic offering relief from kidney dysfunction.—[*D. D. N. J., F. D. C. 1134 and 1230; June 1945.*]

Trapper's Preparation for Sinus.—Trapper's Remedies, Inc., Weiser, Ida. Shipped April 15, 1942. Composition: Essentially ground, woody material, not identified. Misbranded because label falsely represented among other things, that preparation would prevent, cure or benefit sinus disease, headache, colds, trench mouth and stomach ulcers, improve circulation and overcome nervousness.—[*D. D. N. J., F. D. C. 1121; June 1945.*]

Medical Motion Pictures

FILM REVIEWS

Technique of Anaesthesia: A group of eleven 16 mm. sound films depicting various technics used by anesthetists in teaching military personnel of the British armed forces during the war. Available—rental or purchase—through the College Film Center, 84 East Randolph Street, Chicago 1.

These films were made at Westminster Hospital, London, under the supervision of I. W. Magill, director of anesthesia at that institution and senior consultant in anesthesia to the British army. The photographic work was contributed by the Realist Film Unit of London. In several of the films, exceptionally effective use is made of well executed animated drawings. The scenario for each film is well planned to accomplish its purpose. A few unfortunate instances of inattention to detail (e. g. detracting backgrounds and the use of bright metal table tops acting as confusing mirrors) are evident but gratifyingly rare as compared with many medical films. Sound effects are in general well synchronized with action, and the narrator speaks distinctly and slowly as is proper. The British accent will be understood easily by American audiences, but an occasional use of terms uncommon in this country may confuse some listeners. For instance, a "trolley" as the four wheeled conveyance on which patients are transported through the corridors of a hospital may be unfamiliar.

This group of films was produced with the object of aiding in the rapid instruction of medical personnel in time of war. They were designed to deal with technical performance expected of anesthetists under such conditions. No attempt has been made to represent physiologic background or the refinements of technic used in civilian practice. Certain details of procedure and equipment differ from those used in this country, and these may prove somewhat confusing to physicians here. The contribution to safety of constant palpation of the pulse in either the facial or the temporal artery and frequent estimation of the blood pressure by the anesthetist are not emphasized or illustrated as a routine accompaniment of anesthetic procedures. Nevertheless these eleven films are excellently prepared for the purpose for which they were intended. Certain of them may prove very useful in the instruction of American audiences.

I. *Signs and Stages of Anaesthesia* (twenty-three minutes).—As stated in the introductory legend, the classification is based on that of Guedel. Excellent use of animated diagrams makes for clear exposition. It is unfortunate that demarcation of the beginning of plane one and the end of plane four of third stage surgical anesthesia do not correspond exactly with Guedel's description. Illustration of the various planes on clinical cases is masked somewhat by unnecessary covering of the patient's chest and abdomen. These are minor faults, however, and the film will be found very useful in teaching medical students and young anesthetists.

II. *Open Drop Ether* (thirty-one minutes).—An example of excellent photography and, in many cases, of excellent "acting." Probably this film was one of the earliest in the series, for it shows faults which are probably due to the stress of the moment rather than the intention of the anesthetist. The open technic is no longer open when the mask is covered with waterproof material; and, though this method of allowing carbon dioxide to accumulate may be justifiable during induction, it should not be used during maintenance. It is admitted by all that the secret of the method lies in a constant gradual increase of the quantity of ether applied to the mask, and the film shows the very reverse of this. The importance of adding oxygen to the inspired vapor during deep anesthesia is insufficiently stressed. The stages of anesthesia are well illustrated.

III. *Nitrous Oxide-Oxygen-Ether Anaesthesia* (twenty-seven minutes).—The principles and details of the anesthetist's apparatus are shown with the greatest clarity. Excellent animated drawings make for ease of understanding. Since apparatus is designed to accomplish the same purpose the world over, the minor mechanical differences in construction by English and American manufacturers need not confuse an American audience. The use of a basic mixture of 5 parts of nitrous oxide to 1 of oxygen (17.5 per cent) as illustrated in the film might be changed to 4 to 1 in the interest of safety. With certain qualifying comment by the instructor, this film should prove most useful in the teaching of American medical students and others.

IV. *The Carbon Dioxide Absorption Technique* (twenty-four minutes).—Animated drawings have been used extensively to illustrate the absorption of carbon dioxide from anesthetic atmospheres. The drawings are undoubtedly very helpful in simplification but seem not so well done as in some other films of the series. Ease of understanding would be promoted if the representation of respiratory movements was made continuous as they occur naturally rather than with periodic interruption. A useful film until a better one becomes available.

V. *Endotracheal Anaesthesia* (twenty-six minutes).—This deals with technic only. A well thought out representation of the subject with excellent photography and "acting." The simple details are depicted in a manner designed to help the neophyte to a working knowledge. The necessity of brevity has apparently caused the omission of the disadvantages and difficulties while emphasizing the desirable features. No mention is made of the possibility of respiratory obstruction even though the larynx has been intubated. Details of cleansing the upper and lower tracts before extubation are omitted. However, the film has distinct value as an aid in teaching endotracheal technics to students and prospective anesthetists who have had no previous experience.

VI and VII. *Intravenous Anaesthesia* (thirty and twenty-five minutes.—These two films deal with elementary technical details of the intravenous administration of pentothal sodium. Probably necessary for wartime instruction but of little value in this country at this time.

VIII. *Spinal Anaesthesia* (thirty-four minutes).—Technical details only, of the use of one drug (nupercaine). The handling of needles and other equipment in the manner of performing spinal puncture will seem clumsy to some American anesthetists. The use of 1:200 nupercaine is not generally accepted in this country at the present time. The apparent neglect of observation of the blood pressure and pulse as a guide to the control of the condition of the patient is disappointing. The photography is beautiful, as is the aid of animated drawings. It would be undesirable if not dangerous to show this picture to general and undiscriminating audiences.

IX. *Respiratory and Cardiac Arrest* (fifteen minutes).—The purpose inspiring the preparation of this film is good and the representation of the subject to the profession is important. The execution here depicted leaves much to be desired. The importance, in an emergency, of simple prompt inflation of the lungs with oxygen by the anesthetist seems to have been neglected in the effort to illustrate the more spectacular but less frequently needed cardiac massage. Interesting to medical audiences no doubt but of doubtful teaching value.

X. *Operative Shock* (sixteen minutes).—Many anesthetists would question whether well conducted deep anesthesia is necessarily a cause of shock. The assumption is made that flow meters rather than the patient afford dependable evidence of whether the patient is well supplied with oxygen. The emphasis is often placed on "drops per minute" and other extrinsic evidences rather than on the condition of the patient. The photography and graphic representations are again excellent. One might question whether the subject of shock is one which lends itself to consideration by the use of the cinema. Perhaps it was justified as a military measure, but this film scarcely deserves wide showing in peacetime.

XI. *Handling and Care of the Patient* (twenty-six minutes).—Much detail and some humor represent good things and bad things to do in handling patients in the operating room and in their beds after operation. Although different equipment is used than that commonly available in this country, the film ought to prove most valuable in the instruction of nurses, orderlies and other attendants who help with the care of patients. The points stressed certainly ought to be, but are not, second nature to every American physician. Therefore, the showing of this film to any medical or allied audience will prove diverting as well as instructive.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Dentists: Unauthorized Extraction of Teeth.—The plaintiff sued for damages for the wrongful removal of five teeth by the defendant dentist. From a judgment in favor of the plaintiff the defendant appealed to the district court of appeal, first district, division 1, California.

The plaintiff alleged that he visited the office of the defendant, a duly licensed dentist, for the purpose of having one designated tooth extracted. He was placed in a dental chair and an anesthetic was administered. While he was under the influence of the anesthetic, the defendant "carelessly and negligently" and without the plaintiff's consent extracted from the plaintiff's jaw five teeth in addition to the one which he had designated. Certain evidence came into the case under the following circumstances: The plaintiff was called as the first witness, but shortly after he started to testify, Dr. Hendricks, a San Francisco dentist, whose qualifications are not questioned, was permitted to take the stand, by consent, out of order. Over defendant's objections Dr. Hendricks was permitted to testify that when a tooth shows signs of decay or has a hole in it there are other remedies besides extraction, namely the insertion or installation of fillings, crowns or inlays; that it is customary practice in San Francisco to take an x-ray before extracting a tooth.

It is the theory of the defendant that the complaint charges the removal of five teeth without the consent of plaintiff and it is urged that such a complaint charges an assault, that negligence is no part of a cause of action for assault and that it was therefore error to admit evidence and to instruct on the subject of negligence.

After the defendant had objected to the questions asked Dr. Hendricks, said the court of appeal, the trial court indicated that it interpreted the complaint as charging negligence. Therefore the defendant knew that negligence was an issue shortly after the opening of the trial. Furthermore the defendant himself introduced evidence on such issue. He testified that x-rays were unnecessary for two reasons: In the first place, plaintiff did not want to pay for them; in the second place, the teeth in question were so badly diseased that it was obvious extractions were in order. He also testified that because of the condition of the teeth it would have been impossible to fill or crown them and that had they remained in plaintiff's mouth they would have impaired his health. Plaintiff testified that the five teeth in question were in good condition and that the defendant at no time suggested that x-rays be taken. At the close of all the evidence the plaintiff moved to amend his complaint to conform to the proof so as to allege specifically that it was the custom in the community to take x-rays before making an extraction. This motion was denied on the ground that the complaint generally alleged negligence and that it was not necessary to set forth the evidentiary facts. The complaint charged not only that the extractions were made without consent but also that they were negligently and carelessly made. If negligence is charged and evidence is introduced on the issue, it is proper to give instructions on the standard and the degree of care required of a medical man. Accordingly the court of appeal held that the evidence had been properly admitted under the plaintiff's complaint and the judgment in favor of the plaintiff was affirmed.—*Estrada v. Orwitz, 170 P. (2d) 43 (Calif., 1946).*

Hospitals, in General: Liability for Injuries to Invitee.—The plaintiff obtained a judgment against the defendant hospital for damages resulting from a fall in the hospital lobby, from which judgment the hospital appealed to the United States Court of Appeals of the District of Columbia.

The plaintiff entered the defendant hospital for the purpose of visiting a patient. It was then the middle of the afternoon and it had been raining almost continuously since 8 o'clock that morning. The floor of the lobby was highly polished and had become wet from people passing over it with wet shoes and dripping umbrellas. The court of appeals said that, from the evidence produced, the jury could have inferred that the floor was visibly and palpably wet at 2:45 p. m., the time the plaintiff slipped and was injured, and the accumulation of water was a continuous process ever since the floor was mopped at 8:30 in the morning. The jury might fairly think, the court continued, that due care required the hospital during this time to discover that this gradual wetting process was going on, or to realize that it must be going on, and to make some effort to obviate it. The hospital, however, made no such effort during the six hours which elapsed between 8:30 a. m., when the floor was gone over with a dry mop, and the time of the accident. Accordingly, said the court, reasonable men might conclude, as the jury did, that the floor was wet by reason of negligence on the hospital's part. Whether this court would or would not have reached the same conclusion, added the court of appeals, is of course immaterial. The evidence also supported the conclusion that the wet floor was one of the causes of the plaintiff's fall. Falls are more likely on wet floors than on dry ones. Furthermore, standing water is more effective than damp shoes in reducing friction or traction between floors and shoes and is more likely to cause falls. Even if the previous dampness of the plaintiff's shoes was one cause of her fall, the hospital was responsible if its negligence was another cause. The evidence justified the inference that the wet floor was at least a contributing cause of the fall. The alternative inference, that the plaintiff's damp shoes were the sole cause of her fall, might reasonably be thought quite improbable. The evidence therefore supported the jury's verdict, concluded the court of appeals, and the judgment in favor of the plaintiff was affirmed. —*Doctors Hospital, Inc., v. Badgley, 156 F. (2d) 569 (1946).*

Charitable Hospitals: Criteria of Tax Exemption.—The plaintiff hospital filed suit against the city of Corpus Christi, seeking cancellation of certain taxes assessed by the city against land owned by the hospital, and on which the hospital was conducted. Exemption from taxation as a public charity was claimed under section 2, article 8 of the Texas constitution and section 7, article 7150, Vernon's Annotated Texas Statutes. Judgment of the trial court was rendered in favor of the hospital, canceling the taxes and enjoining the city from seeking to collect them. Accordingly the city perfected an appeal, which the Supreme Court assigned to the court of civil appeals of El Paso, Texas.

The plaintiff hospital was organized in 1924 as a charitable corporation. It was built with funds donated by the Protestant churches and organizations within the city and adjacent territory. Its corporate purposes are purely charitable; it has never declared a dividend and it is not legally competent so to do. Its officers and directors receive no compensation. Since 1939, when the hospital lands were taken into the city limits, it has been operated in accordance with a contract executed between the hospital and Mr. and Mrs. Ed Sizer Jr. Under the terms of this contract the administrators, Mr. and Mrs. Sizer, had the following obligations: to pay the corporation $300 per month, this to be paid although they might operate the hospital at a loss; to pay all operating expenses from the current revenues of the hospital, and to devote all their time to the administration of the hospital. After the discharge of these obligations the administrators had the right to retain all the revenue of the hospital as their own; likewise they had the uncontrolled discretion to fix the rates for all hospitalization and to collect therefor. They likewise by fair implication had, said the court, the right to exclusive possession of this property.

It is very clear, said the court of civil appeals, that if any charity was extended in the operation of this hospital it was at the expense of the administrators. They were in no way bound to extend charity to anyone. On the payment of $300 per month and the current expenses they had untrammeled control of the hospital. The corporation had no right to employ or discharge a single employee, or to control one in any manner. The corporation had no contractual relationship with those receiving hospitalization. In the opinion of the court, the relationship created by the contract has many of the elements of that of landlord and tenant; the administrators paid the corporation $300 per month for the privilege of operating the hospital for their own benefit. It is true, continued the court of appeals, they were bound to devote their entire time thereto, but after shouldering the burdens imposed by the contract they were entitled to all profits made in the operation. A charitable corporation operating a hospital on its own property may, out of the revenue derived, pay the expenses of operation, including salaries of employees; but for the property to be exempt from taxation the corporation must itself operate the hospital, and the entire property must be devoted to purely public charity. Whether the contract under which the administrators conducted this hospital be called a lease or an operating agreement, the hospital was not operated by the corporation through its agents or employees. Accordingly the judgment in favor of the plaintiff hospital was reversed, and judgment was rendered in favor of the defendant city.—*City of Corpus Christi v. Fred Roberts Memorial Hospital, 195 S. W. (2d) 429 (Texas, 1946).*

Council on Medical Education and Hospitals

PLAN FOR UNIFORM INTERN PLACEMENT

A new agreement for internship placement was formulated at a meeting of the Committee on Internships and Residencies of the Association of American Medical Colleges, at Edgewater Park, Miss., on Oct. 28, 1946. Representatives of the Council on Medical Education and Hospitals of the American Medical Association and of the American Hospital and Catholic Hospital associations participated. Although it was not possible for the American Protestant Hospital Association to send a delegate, the plan as subsequently adopted was approved by the trustees of that association. Following unanimous approval at the executive session of the Association of American Medical Colleges, the Council on Professional Practice of the American Hospital Association and the Council on Medical Education and Hospitals of the American Medical Association took confirmatory action. The plan has been submitted to the Catholic Hospital Association and it is hoped that its confirmation will be announced shortly.

DETAILS OF PLAN

1. That letters of recommendation by faculty members as a hospital requirement should be eliminated, all information about applicants being centralized in the deans' offices and credentials sent out from there. (This action was taken in an effort to relieve overburdened faculty members of the task of writing an increasing number of letters of recommendation to support internship applications. Also it was hoped that the information from the faculty might be assembled in the dean's office and then incorporated in one letter of recommendation. This should simplify the work of the hospitals in reviewing the records and recommendations on each case.)

2. That the hospitals be requested to eliminate statement from intern application blank that the student will agree to accept if appointed.

3. Date for filing applications and release of credentials by the medical schools set at Oct. 15, 1947. (These dates are for internships beginning July 1, 1948.)

4. Appointment date by hospitals not before Nov. 15, 1947. (These dates are for internships beginning July 1, 1948.)

5. No specific waiting period following announcement of appointments. Hospitals will be requested to notify all applicants of acceptance, alternate position or rejection (with the understanding that notification of rejection may be made by the hospital at any time). (Rejection notices may be sent as soon as decision is made, any time before appointment date or as soon as possible after that date.)

6. Notification is to be sent to the hospitals that it is anticipated that dates for filing release of information and appointment will be moved further into the senior year in 1949. (For internships beginning in 1949.)

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS
EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Boards in Specialties were published in The Journal, Jan. 18, page 199.

BOARDS OF MEDICAL EXAMINERS

Arkansas:* *Medical. Examination.* June 5-6. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, June 5. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

California: *Examination.* Los Angeles, March 10-13. Sec., Dr. Frederick N. Scatena, 1020 N. St., Sacramento 14.

Connecticut:* *Medical. Examination.* Hartford, March 11-12. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven. *Homeopathic.* Derby, March 11. Sec., Dr. J. H. Evans, 1488 Chapel St., New Haven.

Georgia: Atlanta and Augusta, June. Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

Illinois: Chicago, Jan. 28-30. Supt. of Registration, Department of Registration & Education, Mr. Philip Harman, Springfield.

Indiana: *Examination.* Indianapolis, June. Exec. Sec., Board of Medical Registration and Examination, Miss Ruth V. Kirk, 627 K. of P. Bldg., Indianapolis.

Iowa:* *Examination.* Iowa City, March 17-19. Corresponding Sec., Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

Maine: Portland, March 11-12. Sec., Board of Registration of Medicine, Dr. A. P. Leighton, 192 State St., Portland.

Massachusetts: Boston, March 11-14. Sec., Board of Registration in Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston 33.

Missouri: *Examination:* Kansas City, Jan. 27-29. Exec. Sec., Department of Education, Mr. John A. Hailey, State Capitol Bldg., Jefferson City.

Montana: Helena, April 1-2. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.

Nebraska:* *Examination.* Omaha, June. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, State Capitol Bldg., Lincoln.

Nevada: *Examination.* Carson City, May 5. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

New Hampshire: Concord, March 13. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

New Jersey: Trenton, June 17-18. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

New Mexico:* Santa Fe, April 7-8. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

New York: Albany, Buffalo, New York and Syracuse, Jan. 27-30. Sec., Dr. Jacob L. Lochner, Education Bldg., Albany.

Pennsylvania: Philadelphia and Pittsburgh, July. Acting Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

Texas: *Examination.* Galveston, Feb. 20-22. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

Vermont: *Examination.* Burlington, Jan. 31-Feb. 1. Sec., Board of Medical Registration, Dr. F. J. Lawliss, Richford.

Washington: *Examination.* Seattle, January. Sec., Mr. Nelson Vaughn, Olympia.

Wyoming: Cheyenne, Feb. 3. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

---

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Connecticut: Feb. 8. Address State Board of Healing Arts, 250 Church St., New Haven.

District of Columbia: Washington, April 21-22. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

Florida: May 31. Sec., Dr. M. W. Emmel, University of Florida, Gainesville.

New Mexico: Santa Fe, Feb. 2. Secretary, State Capitol, Santa Fe.

Oklahoma: Oklahoma City, March 17. Sec., Dr. J. D. Osborn, Jr., Frederick.

Oregon: Portland, March 1. Sec., Board of Higher Education, Mr. C. D. Byrne, University of Oregon, Eugene.

Rhode Island: Providence, Feb. 12. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days Three journals may be borrowed at a time Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested) Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

72:371-500 (Oct) 1946

Preclinical Stage of Infantile Hypertrophic Pyloric Stenosis. A. Wallgren —p 371.
*Congenital Deafness and Other Defects Following German Measles in Mother Louise A Hopkins —p 377.
*Reenforcing or "Booster" Injection of Pertussis Vaccine in Previously Immunized Children of Kindergarten Age: Pertussis Field Series V. Pearl Kendrick, Grace Eldering and Mary Thompson —p. 382.
Speech Therapy for Children with Cerebral Palsy. M. A. Perlstein and Marie Shere — p. 389
Convulsions in Childhood: Twenty Year Study of 2,500 Cases M. G Peterman —p 399
Recurrence of Infection Following Therapy with Sulfonamide Compounds and Penicillin P E. Rothman.—p 415

Congenital Deafness Following German Measles in the Mother.—Hopkins suggests that rubella occurring early in pregnancy may be the cause of certain cases of congenital deafness that have formerly been unexplained. Ten such cases are reported in which the mother had German measles during pregnancy. Two cases in which the mother did not have German measles but had another virus disease, influenza, and 6 cases in which the mother did not have any virus diseases during pregnancy but in which the child exhibited some of the same congenital defects are also listed.

"Booster" Injections of Pertussis Vaccine.—Immune response as measured by the opsonocytophagic reaction was studied by Kendrick and her associates in 187 children before and after a stimulating injection of plain pertussis vaccine given at the time of entry into kindergarten Tests before the "booster" dose suggested that a moderately high level of opsonic activity was maintained for as long as four years after primary immunization Tests after the "booster" injection showed reactions on the average 1.6 times those before the injection, and the average increased from the moderate range to that of strong reaction. The results lend experimental support to the policy of giving a "booster" injection of pertussis vaccine to children just before they start school, when the likelihood of exposure to whooping cough is greatly increased

American Journal of Hygiene, Baltimore

44:313-436 (Nov.) 1946

Studies on Schistosomiasis Japonica: I. Introduction —p 313.
Id : II. Methods of Surveying for Schistosomiasis Japonica. F. B. Bang, N G Hairston, O H Graham and M S Ferguson —p 315
Id : III Epidemiologic Study of Schistosomiasis Japonica R. R. Sullivan and M S Ferguson —p 324
Id IV Chemotherapy of Experimental Schistosomiasis Japonica F B Bang and N G Hairston —p 348
Id V Protection Experiments Against Schistosomiasis Japonica M S Ferguson, O. H Graham, F. B. Bang and N. G Hairston —p 367
*Further Studies on Treatment of Filariasis Due to Wuchereria Bancrofti with Lithium Antimony Thiomalate H. W. Brown and N D Thetford —p. 379
Effects of Protein Deficient Diets on Immunity to Nematode (Nippostrongylus Muris) Infection A W. Donaldson and G F. Otto —p 384.
*Efficacy of Cox Type Vaccine in Prevention of Naturally Acquired Louse Borne Typhus Fever A G Gilliam —p 401
Comparative Study of Water, Salt and Heat Exchanges of Men in Tropical and Desert Environments G W. Molnar, F J Towbin, R E Gosselin and others —p 411.

Lithium Antimony Thiomalate in Filariasis—Brown and Thetford made observations on natives of St Croix, Virgin Islands They found that lithium antimony thiomalate given intramuscularly to patients infected with Wuchereria bancrofti produces a rapid diminution in the number of circulating microfilariae which so far has persisted for two years. The antimony blood plasma levels and erythrocyte levels in patients successfully treated did not differ appreciably from those of a patient unsuccessfully treated No evidence of inflammation or incipient elephantiasis has been detected in the patients over a period of two years

Efficacy of Cox-Type Vaccine in Typhus.—Gilliam says that experience among employees of the Cairo Fever Hospital suggests that three doses of Cox-type vaccine, as manufactured late in 1942, afforded some protection against an attack of naturally occurring louse-borne typhus fever. One or two doses of this vaccine did not offer much protection against attack

American Journal of Pathology, Ann Arbor, Mich.

22:1081-1334 (Nov) 1946

*Fatal Hookworm Disease in Infancy and Childhood on Guam H M Zimmerman —p. 1081.
*Experiments on Spread of Neoplastic Cells Through Respiratory Passages J. Furth —p 1101
Hemorrhagic Diathesis Experimentally Induced by Deficiency in Vitamin K. Histopathologic Study A Ferraro and L Roizin —p 1109.
Studies on Coagulation Defect in Case of Thrombocytopenic Purpura Complicated by Thrombosis P. M. Aggeler, S Lindsay and S P Lucia —p 1181
Studies on Ameboid Motion and Secretion of Motor End Plates VIII Experimental Morphologic Pathology of Chemical Transmitter of Nerve Impulses in Course of Wallerian Degeneration E J. Carey, L C Massopust, E. Hausbalter and others —p 1205
Experimental Studies in Cardiovascular Pathology: XIV Experimental Atheromatosis in Macacus Rhesus Monkeys W C Hueper.—p 1287
Metastatic Calcification Associated with Hypervitaminosis D and Haliphagia R. M Mulligan —p 1293.
Pathological Calcification in Gingivae W. F. Barnfield —p 1307.

Fatal Hookworm Disease. — Postmortem examinations carried out on Guam in 1945 on 50 children of 4 years of age and under revealed that in 21 instances the primary cause of death was hookworm disease with its attendant complications. Serious terminal infections, chiefly of the respiratory tract, often obscured the underlying hookworm disease The most important lesion of hookworm disease was acute *jejunitis*, which progressed in some cases to produce widespread ulceration, hemorrhage, necrosis and even gangrene of this part of the intestinal tract. In 6 cases there occurred an extensive purulent peritonitis A prominent feature of the intestinal lesion was the infiltration of eosinophilic leukocytes.

Spread of Neoplastic Cells Through Respiratory Passages.—Furth observed that carcinoma cells instilled into the nostrils of lightly anesthetized mice reached the lungs and produced large tumors Leukemic cells of a lymphoid strain similarly introduced produced fatal leukemia with no gross pulmonary changes Leukemic cells of four other strains produced tumor-like pulmonary infiltrations, with spread to regional lymph nodes terminating in generalized leukemia

American Journal of Surgery, New York

72:635-770 (Nov.) 1946

Evaluation of Common Procedures in Mammaplasty and New Technic Else K La Roe —p 641.
War Wounds of Abdomen Review of 131 Cases J. H Bogle —p 656
Foot Problem as Seen in Soldiers A A Schmier.—p. 668
Surgical Aspects of Carcinoma of Stomach. E L Eliason and R. H Witmer —p 679.
*Indications for Determination of Thickness for Split Skin Grafts E C Padgett.—p 683
Refrigeration in Surgery. H. I Miller and P R Miller.—p. 694
Source of Nerve Autografts in Clinical Surgery Technic for Their Suture I M Tarlov, W. Hoffman and J C. Hayner —p 700.
*Local Use of Ice After Orthopedic Procedures H J Schaubel —p. 711
Transscrotal Orchidopexy in Adults T. B. Carney, P A Leuther and M M. Marks —p 715.
Comparison of Intravenous Aminophyllin with Common Drugs in Biliary Colic. F R Cole —p 719.
External Skeletal Fixation of Fractures I. H Scott —p 723
Conservative Treatment of Thyrotoxicosis with Thiouracil J. K. Narat —p 734
Management of Carcinoma of Colon in Small General Hospital M P. Welborn —p 738
Vaginoplasty. R M Toll —p 742
Intradermal Sensitivity Test for Amino Acids B J. Ficarra.—p 744

Thickness of Skin Grafts.—Padgett maintains that many of the advantageous properties of skin grafts, provided a good "take" can be obtained, become greater, the thicker the skin graft has been cut; on the other hand, the disadvantageous properties, except that of a certainty of a "take," increase as the thickness of the skin graft decreases. There are four different thicknesses of sheet skin grafts: (1) Thiersch graft, which is supposed to contain only the epithelial layer, but which usually contains also some corium; (2) the superficial and intermediate "split skin" graft, which extends to one-third or two-thirds of the skin depth; (3) the so-called "three quarter thickness" skin graft which takes in from 75 to 90 per cent of the skin depth, and (4) the full thickness skin graft which includes all skin layers. Thin skin grafts are generally used in adults to cover granulating areas and to reline cavities. "Three quarter thickness" skin grafts are used not only after release of healed or nearly healed contractures and to cover aseptic denuded areas or cavities but also on the neck and face. In children full thickness skin grafts are used when small areas are to be covered and in web fingers.

Local Use of Ice After Orthopedic Procedures.—Following surgery or manipulation Schaubel used ice caps on 345 of 824 patients; ice was not used on the remaining 479 patients. Immediately postoperatively the cloth-covered ice bags are applied to the plaster or soft bandage over the operative site. The ice caps are refilled every four hours and are used for forty-eight hours postoperatively. The accumulated air in the ice caps should be released at hourly intervals to allow them to hug the cast snugly. Schaubel found that in the patients in whom ice was used locally fewer casts were split; the temperature, pulse rate and respiratory rate were lower; white blood cell counts were nearer normal; postoperative complications were fewer, and the amount of narcotic needed was reduced. Subjectively, the patients who have ice applied locally fare better in all respects than the patients who have no ice application.

American Review of Tuberculosis, New York

54:191-324 (Sept.) 1946

*Streptomycin in Treatment of Clinical Tuberculosis. H. C. Hinshaw, W. H. Feldman and K. H. Pfuetze.—p. 191.
Effect of Water Soluble Lipids on Growth and Biologic Properties of Tubercle Bacilli. R. J. Dubos, B. D. Davis, G. Middlebrook and Cynthia Pierce.—p. 204.
Adequate Diet in Tuberculosis. F. M. Pottenger Jr. and F. M. Pottenger.—p. 213.
Tuberculosis and Hunger Edema. P. Chortis.—p. 219.
Tuberculosis Among Persons of Japanese Ancestry in United States. D. W. Boardman.—p. 227.
Tuberculosis in the San Blas Indians of Panama. L. G. Bush.—p. 239.
Tuberculosis in Liberated European Political Prisoners of War: Pathologic Study of 87 Fatal Cases. C. P. Larson.—p. 247.
Effect on Tuberculosis Morbidity of Complete Community Survey with Hospitalization of All Active Cases. R. Davies.—p. 254.
Tuberculosis in Sanatorium Personnel: Tuberculin Survey and Incidence of Active Tuberculosis. D. M. Lim-Yuen.—p. 261.
Tuberculosis Survey in Private Hospital. H. H. Epstein and Agnes Meliss.—p. 272.
Pregnancy and Tuberculosis: Present Status of Problem. L. L. Friedman and J. R. Garber.—p. 275.
Spontaneous Hemopneumothorax: Case Report. R. Vander Meer.—p. 283.
Relation Between Chemical Structure of Sulfones and Their Bacteriostatic Activity: In Vitro Studies with Virulent Human Type Tubercle Bacilli. G. P. Youmans and L. Doub.—p. 287.
Comparison of Effect of P-Amino Phenyl Sulfone Compounds in Vitro and in Vivo on Tubercle Bacilli. G. P. Youmans, W. H. Feldman and L. Doub.—p. 295.
*Antimony Compounds in Tuberculosis: Their Effect on Experimental Tuberculosis in Guinea Pigs. H. M. Rose, A. Gellhorn and J. T. Culbertson.—p. 299.
Passive Transfer of Local Allergic Hypersensitiveness to Tuberculin. H. J. Corper and R. E. Stoner.—p. 305.
Specific Cytotoxic Action of Tuberculin: Studies on Tissues of Tuberculous Rabbits in Which Negative Cutaneous Reactions to Tuberculin Have Developed. Dorothy H. Heilman and W. H. Feldman.—p. 312.

Streptomycin in Clinical Tuberculosis.—Hinshaw and his associates treated 10 patients with generalized hematogenous tuberculosis with or without meningitis with streptomycin. Four patients are still living, but persistent clinical observations indicate the possibility of residual infection. The 4 surviving patients are the only ones who were given streptomycin intrathecally. Nineteen of 24 patients with pulmonary tuberculosis improved sufficiently to suggest that streptomycin was a factor in altering the unfavorable trend noted before treatment with streptomycin. There was also a prompt response in 6 cases of ulcerating tuberculosis of the respiratory tract. Streptomycin seems primarily of palliative value in tuberculosis of the urinary tract. Improvement in excess of what might be expected from pleural lavage was observed in only 1 of 7 cases of tuberculous empyema. The authors conclude that at this time streptomycin cannot be recommended as a substitute for long established therapeutic procedures.

Antimony Compounds in Tuberculosis.—Rose and his associates treated tuberculous guinea pigs intensively with the antimony compounds Anthiomaline (lithium antimony thiomalate), fuadin (stibophen), neostam (stibamine glucoside) and neostibosan (ethyl stibamine). The results indicated that antimony, thus administered, did not exert a deleterious effect on the course of the tuberculous infection. On the contrary, fuadin, neostam and neostibosan apparently have a slight but definite restraining influence on the infection.

Archives of Dermatology and Syphilology, Chicago

54:497-636 (Nov.) 1946

Vehicles in Topical Dermatologic Therapy: Their Functions and Physicochemical Characteristics. C. G. Lane and I. H. Blank.—p. 497.
Dermatitis from Large Dose of Penicillin Taken Orally: Report of Case. F. W. Oberst and M. Murray.—p. 514.
*Contact Dermatitis from Penicillin: Source of Antigen. S. Friedlaender, R. M. Watrous and S. M. Feinberg.—p. 517.
Observations on Cause and Transmission of Granuloma Inguinale. C. C. A. Butts and S. Olansky.—p. 524.
*Rhinoscleroma: Observations Based on Study of 200 Cases. E. Reyes.—p. 531.
Mammalian Pigmentation: Problem of Pigmentary Mechanism Studied by Means of Respiration of Tissues. H. Sharlit and Elsie M. Walter.—p. 538.
*Diagnostic Significance of Culture Method in Cutaneous Leishmaniasis (Oriental Sore). A. Dostrovsky and F. Sagher.—p. 543.
Aspergillus Infection of Nails. E. S. Bereston and W. S. Waring.—p. 552.
Dermatophytosis Due to Combined Infection with Trichophyton Interdigitale and Trichophyton Purpureum: Report of Case. E. Muskatblit.—p. 558.
Erythema Multiforme and Erythema Nodosum: Comparative Study of 54 Patients. R. O. Noojin and J. L. Callaway.—p. 560.

Contact Dermatitis from Penicillin.—Friedlaender and his co-workers observed contact dermatitis in 5 persons handling penicillin. Investigations were made in 4 of these cases to determine whether the source of the sensitizing agent was penicillin or the impurities contained in the commercial preparation. In 3 cases a sensitivity to the active principle of penicillin was determined. No relationship between contact dermatitis due to penicillin and clinical allergy to molds was observed. It is pointed out that contact dermatitis may occur in many patients receiving topical penicillin therapy.

Rhinoscleroma.—According to Reyes rhinoscleroma is a tumor formation of waxy or reddish appearance with a decided tendency to ulcerate and spread. It has been ascribed by Frisch to a bacillus of the Friedländer type, but the author's research work is focused on the theory that rhinoscleroma is caused by a filtrable virus. It is a chronic disease which transforms the countenance of the patient to such an extent that he resembles a rhinoceros. The disease develops in three stages, the period of rhinitis, the infiltrating period and the nodular period. Mortality varies with the localization and extension of the lesion. For patients with laryngeal localization with extension to the trachea, asphyxia by obstruction is the constant threat and tracheotomy is required to save the patient's life. There may be recurrences, and the patients may end up with pulmonary tuberculosis or the lesions may become malignant. The author regards roentgen irradiation or intramuscular injection of azosulfamide as the most effective treatments and thinks that with early treatment the disease is curable.

Culture Method in Cutaneous Leishmaniasis.—Dostrovsky and Sagher stress that the varied clinical picture of cutaneous leishmaniasis (Oriental sore) makes an objective diagnostic method highly important. Since in the atypical and late types of the disease the microscopic demonstration of parasites often fails, the authors have given their attention to the diagnostic significance of the culture method, which they describe. The results in 31 cases of leishmaniasis nodosa and leishmaniasis ulcerosa and in 30 cases of leishmaniasis recidiva are presented in evidence of the possibility that parasites can be demonstrated in cultures. In 26 cases the cultures were the only means of establishing the presence of parasites.

Bulletin of Johns Hopkins Hospital, Baltimore

79:261-332 (Oct.) 1946

- *Clinical Significance of Certain Changes in Limb Lead Electrocardiogram in Arterial Hypertension. G. F. Filley.—p. 261.
- 524 Abdominal Wounds on Western Front. H. W. Jones Jr., W. H. Falor and C. B. Burbank.—p. 283.
- Effects of Cochlear Lesions on Click Responses in Auditory Cortex of Cat. E. M. Walzl and C. N. Woolsey.—p. 309.

Electrocardiogram in Hypertension.—Filley attempted to determine what meaning, if any, can be attached to the term "left ventricular strain." One hundred selected cases of arterial hypertension were analyzed, and the findings were correlated with the limb lead electrocardiogram in each case. Inversions of T waves and ST segment depressions in lead 1 or in leads 1 and 2 were associated primarily with high diastolic arterial pressure, coronary sclerosis, and hypertrophy of the heart as a whole. These ST-T changes were not significantly related to an increase of thickness of the left ventricular wall relative to that of the right ventricle. The poor prognosis usually associated with this electrocardiographic pattern was shown to depend largely on other prognostic signs. The pattern of "left ventricular strain" was not in itself an indication that the myocardium had failed or was about to fail.

Endocrinology, Springfield, Ill.

39:225-280 (Oct.) 1946

- Factors Affecting Survival in Adrenalectomized Rats. Elaine P. Ralli.—p. 225.
- Effect of Thyroid Activity upon Metabolic Response to Dinitro-Ortho-Cresol. S. B. Barker.—p. 234.
- Further Studies on Effects of Water Soluble Vitamins in Experimental Diabetes. O. H. Gaebler and J. C. Mathies.—p. 239.
- Effect of Mammalian Pituitary Gonadotropins in Ovulation in Frog Rana Pipiens. P. A. Wright and F. L. Hisaw.—p. 247.
- Quantitative Studies of Opening of Vagina of Immature Rats Following Injection of Female Blood and Urine. C. W. Lloyd, W. F. Rogers Jr. and R. H. Williams.—p. 256.
- Turbidimetric Method for Determining Hyaluronidase in Semen and Tissue Extracts. S. L. Leonard, P. L. Perlman and R. Kurzrok.—p. 261.

Georgia Medical Association Journal, Atlanta

35:273-306 (Oct.) 1946

- Congenital Cardiovascular Malformations: Discussion of Some of the More Common Types. Laura L. Lipscomb and W. W. Anderson.—p. 273.
- Practical Diagnosis of Congenital Heart Lesions Amenable to Treatment. H. T. Harper Jr. and Marion W. Mathews.—p. 280.
- Simplified Management of Relative Sterility. R. Torpin.—p. 285.
- Early Rising After Major Surgery. G. F. Jones Jr.—p. 289.

Journal of Aviation Medicine, St. Paul

17:393-498 (Oct.) 1946

- Use of Human Centrifuge in Indoctrination of Navy Fighter Squadron in Use of Antiblackout Equipment. W. G. Clark and R. L. Christy.—p. 394.
- Automatic Parachute Opening Device. G. L. Maison, G. A. Hallenbeck, R. Sturm and E. E. Martin.—p. 399.
- Reactions of Human to Impact Forces Revealed by High Speed Motion Picture Technic. H. R. Bierman and V. R. Larsen.—p. 407.
- Management of Surgical Emergencies Following Aircraft Crashes. E. C. White and R. L. Clark.—p. 413.
- Effects of Aircraft Accidents on Future Performance of Flying Personnel. G. M. Hass.—p. 419.
- Mechanical Forces Acting on Aviation Personnel. D. E. Goldman.—p. 426.
- Physiological Studies on Man with Pneumatic Balance Resuscitator, "Burns Model." H. L. Motley, A. Cournand, M. Eckman and D. W. Richards Jr.—p. 431.
- Roentgenographic Study of "Bends" and "Chokes" at Altitude. W. L. Burkhardt, H. Adler, A. F. Thometz and others.—p. 462.
- Medical Aspects of Troop Carrier Aviation. R. J. Benford.—p. 478.
- Studies on Altitude Decompression Sickness: II. Effects of Altitude and of Exercise. J. S. Gray and R. L. Masland.—p. 483.
- Effectiveness of Certain Systems of Oxygen Supply. J. K. W. Ferguson.—p. 486.
- *Effect of Amphetamine Sulfate on Tilt Table Test. H. W. Newman.—p. 490.
- Some Aspects of Aviation Dentistry. K. F. Knudtzon.—p. 494.

Effect of Amphetamine Sulfate on Pilots.—Amphetamine sulfate had widespread use in military aviation for combating fatigue, and presumably its use will be resorted to by pilots. Newman investigated the possibility of this drug having some deleterious effects on pilot performance. He found that amphetamine sulfate by mouth in a dose of 10 mg. improved the performance of 3 fainters on the tilt table test. In 10 nonfainters there was considerable variation in the effect of the drug with a general tendency toward improvement of performance. The author thinks that in the great majority of subjects amphetamine produces increased resistance of the circulation to postural changes, and that from this point of view the use of amphetamine by flying personnel is not contraindicated.

Journal of Clinical Investigation, Boston

25:665-780 (Sept.) 1946

- *Studies on Bacteria Developing Resistance to Penicillin Fractions X and G in Vitro and in Patients Under Treatment for Bacterial Endocarditis. H. F. Dowling, H. L. Hirsh and Barbara O'Neil.—p. 665.
- Effect of Infection and Trauma on Excretion of Urinary Cortin. R. A. Shipley, R. I. Dorfman, Ethel Buchwald and Ethelreda Ross.—p. 673.
- Parenteral Nutrition: II. Utilization of Emulsified Fat Given Intravenously. J. M. McKibbin, R. M. Ferry Jr. and F. J. Stare.—p. 679.
- Histologic Study of Effects of Experimental Botulinus Poisoning on Livers of Guinea Pigs. D. E. Shay.—p. 687.
- Influence of Ammonium on Plasma Atabrine Level and on Urinary Excretion of Atabrine. W. Trager and M. C. Hutchinson.—p. 694.
- Plasma Alpha-Amino Acid Nitrogen and Serum Lipids of Surgical Patients. Evelyn B. Man, Patricia G. Bettcher, Claire M. Cameron and J. P. Peters.—p. 701.
- Observations on Men Sitting Quietly in Extreme Cold. S. M. Horvath, H. Golden and J. Wager.—p. 709.
- Effect of Methemoglobinemia on Visual Threshold at Sea Level, at High Altitudes and After Exercise. O. Bodansky and C. D. Hendley.—p. 717.
- Voluntary Breathholding: I. Pulmonary Gas Exchange During Breathholding. C. D. Stevens, E. B. Ferris, J. P. Webb and others.—p. 723.
- Id.: II. Relation of Maximum Time of Breathholding to Oxygen Tension of Inspired Air. G. L. Engel, E. B. Ferris, J. P. Webb and C. D. Stevens.—p. 729.
- Id.: III. Relation of Maximum Time of Breathholding to Oxygen and Carbon Dioxide Tensions of Arterial Blood, with Note on Its Clinical and Physiologic Significance. E. B. Ferris, G. L. Engel, C. D. Stevens and J. Webb.—p. 734.
- Fluid Loss in Rats with Tourniquet Shock. S. Koletsky and G. E. Gustafson.—p. 744.
- Studies on Leptospira Icterohaemorrhagiae: II. Critical Study of Effect of Penicillin on Leptospira Icterohaemorrhagiae in Vitro and in Leptospirosis in Guinea Pigs. Shih Lu Chang.—p. 752.
- Quantitation and Regional Distribution of Sweat Glands in Man. W. C. Randall.—p. 761.
- Galactose Disappearance from Blood Stream: Calculation of Galactose Removal Constant and Its Application as Test for Liver Function. H. Colcher, A. J. Patek Jr. and F. E. Kendall.—p. 768.
- Determination of Rate of Disappearance of Mustard Gas and Mustard Intermediates in Corneal Tissue. V. E. Kinsey and W. M. Grant.—p. 776.

Penicillin Resistance.—According to Dowling and his co-workers penicillin G is the fraction of penicillin which is best known and most used, but penicillin F and B have also been isolated in the crystalline form. Since penicillin X is being manufactured in appreciable quantities, the authors decided to investigate whether it is superior to penicillin G. They tested 101 strains of bacteria from human sources for their sensitivity to the two penicillin fractions X and G. They found that organisms which cause human infections usually do not show great differences in their relative sensitivity to penicillin G and penicillin X. In most instances, when resistance to one of these fractions increases, resistance to the other fraction will also increase.

Journal of Nervous and Mental Disease, New York

104:465-582 (Nov.) 1946

- Analysis of 100 Cases of Epilepsy. O. Marburg and M. Helfand.—p. 465.
- Ataxia of Legs and Loss of Vibration: Isolated Spinal Syndrome. L. Halpern.—p. 474.
- Relationship of Vegetative Nervous System to Anginal Anxiety. L. Hess.—p. 480.
- Results of Repetition of Electroencephalography in Adult Epileptics. L. J. Robinson.—p. 486.
- Combat Exhaustion. L. H. Bartemeier, L. S. Kubie, K. A. Menninger and others.—p. 489.
- Emotionally Unfit Soldier: Psychiatric Study of 12,000 Soldiers in Infantry Replacement Training Center. H. N. Roback.—p. 526.
- Sketches of Neuropsychiatry in War and Peace. F. C. Ansanelli.—p. 533.
- Significance of Non-Conforming Behavior in Military Service. A. Laird.—p. 542.

Journal of Neurophysiology, Springfield, Ill.

9:421-474 (Nov.) 1946

Facilitation and Inhibition of Spinal Motoneurons. D. P. C. Lloyd.—p. 421.
Integrative Pattern of Excitation and Inhibition in Two-Neuron Reflex Arcs. D. P. C. Lloyd.—p. 439.
Reflex Control of Ciliary Muscle. A. Kuntz, C. A. Richins and E. J. Casey.—p. 445.
Cortico-Cortical Connections in Monkey with Special Reference to Area 6. A. A. Ward Jr., J. K. Peden and O. Sugar.—p. 453.
Centrifugal Functional Deterioration of Asphyxiated Motor Nerve Within Neural Axis. R. A. Groat and H. Koenig.—p. 463.

Journal of Pediatrics, St. Louis

29:541-676 (Nov.) 1946

Infantile Cortical Hyperostoses. J. Caffey.—p. 541.
Use of Penicillin in Treatment of Subacute Bacterial Endocarditis in Children. R. A. Lyon.—p. 560.
Penicillin in Treatment of Syphilitic Infant: Progress Report. Elizabeth Kirk Rose, P. Gyorgy and N. R. Ingraham.—p. 567.
Methemoglobinemia: Two Cases in Newborn Infants Caused by Nitrates in Well Water. M. Ferrant.—p. 585.
*Methemoglobinemia Occurring in Infants Fed Milk Diluted with Well Water of High Nitrate Content. R. L. Faucett and H. C. Miller.—p. 593.
*Diagnosis of Abortive Poliomyelitis: Study of Illnesses Occurring in 1,123 Contacts of Patients with Poliomyelitis. E. M. Bridge.—p. 597.
Effects of Active Immunization of Mother on Offspring. P. Cohen and S. J. Scadron.—p. 609.
*Epidemic of Diarrhea in Newborn Nursery Caused by Milk-Borne Epidemic in Community. P. R. Ensign and C. A. Hunter.—p. 620.
Effect of Salicylate Administration on Prothrombin Time. G. D. Govan Jr.—p. 629.
Acid-Enzyme Converted Corn Syrup in Infant Feeding. I. J. Wolman.—p. 637.
Squint in Children. D. M. Gordon.—p. 640.
Heart Disease in Children in Rural Iowa County—Particularly in Relation to Rheumatic Fever. R. L. Jackson.—p. 647.

Methemoglobinemia in Infants Due to Well Water of High Nitrate Content.—Faucett and Miller report 2 newborn infants with proved methemoglobinemia who were successfully treated with injections of methylene blue and a third infant who probably had methemoglobenemia and recovered spontaneously. The methemoglobinemia in all 3 infants was associated with ingestion of milk mixtures diluted with well water containing a large amount of nitrate ions. The authors suggest that special precautions be taken in rural areas to see that any water used in the feeding of infants is safe in respect to its nitrate content.

Diagnosis of Abortive Poliomyelitis.—Bridge studied illnesses of 1,123 close contacts of patients with poliomyelitis. The ages of these contacts varied between 6 weeks and 74 years. When the various symptoms were reviewed in respect to the age of the persons concerned, it was noted that fever was particularly common in children below the age of 10 years, headache among the 10 to 40 year group, and diarrhea in the older subjects. Nausea, vomiting and sore throat affected the various age groups in approximately the same proportion. In the absence of laboratory aids to verify the diagnosis, the following circumstances assist in reaching a conclusion: (*a*) similarity of symptoms to those known to occur in mild illnesses caused by the poliomyelitis virus; (*b*) evidence of an incubation period of from one to three weeks; (*c*) the presence of known cases of poliomyelitis in the neighborhood, and (*d*) occurrence during warm weather.

Diarrhea Epidemic in Newborn Nursery Secondary to Milk-Borne Epidemic.—Ensign and Hunter describe an epidemic of diarrhea secondary to a milk-borne epidemic of diarrhea in the community. The infecting organism was Pseudomonas aeruginosa which gained entrance to the milk supply through a rag which dripped into the pasteurized milk of one dairy. The contaminated milk caused an epidemic of gastroenteritis in Great Bend, Kan., and caused outbreaks among patients and employees of the hospital. The infants were secondarily infected by mothers and nurses who drank the milk in the hospital or by other members of the family after the infants had been dismissed from the hospital. There were 24 newborn infants who contracted the diarrhea. Ps. aeruginosa was isolated from the stools of all 9 who were studied bacteriologically. There were 9 deaths among the 24 newborn infants. The epidemic subsided after proper control measures had been taken.

Maine Medical Association Journal, Portland

37:231-248 (Sept.) 1946

President's Address—Maine Hospital Association. F. T. Hill.—p. 231.
Address of Guest of Honor. R. P. Sloan.—p. 235.

37:249-274 (Oct.) 1946

Sexual Crime. A. W. Stearns.—p. 249.
Lung Abscess. W. Swienty.—p. 260.

Michigan State Medical Society Journal, Lansing

45:1287-1406 (Oct.) 1946

Medical Implications of Atomic Energy. F. J. Hodges.—p. 1339.
Refrigeration in Surgery. C. J. Mock.—p. 1344.
Diagnosis and Treatment of Hyperparathyroidism. F. R. Keating Jr.—p. 1349.
Problems of Trauma. J. L. Lindquist.—p. 1353.
General Consideration of Hysterectomy. V. S. Counseller.—p. 1357.

New England Journal of Medicine, Boston

235:637-668 (Oct. 31) 1946

*Islet Cell Tumor of Pancreas with Hyperinsulinism: Report of 6 Cases. A. Marble and L. S. McKittrick.—p. 637.
Unrecognized Vesical Neck Obstruction in Women. C. E. Jacobson Jr.—p. 645.
Retroperitoneal Hemorrhage Complicating Pregnancy: Report of Case. C. T. O'Connor and J. J. Bradley.—p. 648.
*Effect of Age on Clinical Effectiveness of Nitroglycerin Tablets. E. L. Sagall, G. S. Kurland and J. E. F. Riseman.—p. 650.
Diagnosis of Cancer of Pancreas. F. J. Ingelfinger.—p. 653.
Syphilitic Aortitis, with Aortic Insufficiency.—p. 661.
Chondroma of Eighth Costal Cartilage.—p. 663.

Islet Cell Tumor of Pancreas with Hyperinsulinism.—Marble and McKittrick review observations on 6 cases which illustrate the various problems encountered in the diagnosis and treatment of patients with hyperinsulinism. In 5 of these removal of a single adenoma resulted in the relief of symptoms that had persisted from four to seven years after operation. In 1 case death followed seven weeks after a surgical operation which disclosed an islet cell carcinoma with multiple metastases in the liver. In the 4 cases in which assays were carried out, the insulin content ranged from 3 to over 100 units per gram of tumor tissue. The important features in the diagnosis of islet cell tumor are the characteristic symptoms associated with hypoglycemia (blood sugar concentrations usually below 50 mg. per hundred cubic centimeter) brought on by fasting, increased by physical exertion and relieved by food. The dextrose tolerance test is of aid in diagnosis only if carried out for four to six hours to allow the blood sugar to fall to an abnormally low level. Because of the danger of damage to the central nervous system by repeated attacks of prolonged hypoglycemia and because of the possibility of malignant degeneration of the tumor early exploratory operation is urged in patients in whom the diagnosis of islet cell tumor with hyperinsulinism has been made.

Age and Clinical Effectiveness of Nitroglycerin Tablets.—Sagall and his associates investigated the clinical effectiveness in patients with angina pectoris of eleven preparations of hypodermic tablets of nitroglycerin, in dosages ranging from 0.6 to 0.1 mg., at periods varying from a few months to eleven years after manufacture. There was no essential loss of clinical effectiveness in the old tablets as compared to fresh tablets of the same dosage. Fresh tablets exposed to heat of 98.6 F. (37 C.) for three months showed a complete loss of clinical potency, whereas tablets that had been carried by patients in the customary manner for four months showed no loss of clinical effectiveness.

New Orleans Medical and Surgical Journal

99:201-258 (Nov.) 1946

Urethroplasty. J. R. Stamper.—p. 201.
Calcareous Diseases of Pancreas. M. H. Kaplan.—p. 203.
Fenestration Operation for Otosclerosis: Its Possibilities and Its Limitations. J. V. McLaurin.—p. 209.
Disease and the Aged. W. A. Sodeman.—p. 216.
Pathogenesis of Postoperative Atelectasis. C. J. Vedrenne.—p. 220.
Malaria: Epidemiologic Study. L. B. Shpiner.—p. 235.
Spinal Epidural Abscess: Report of Case. J. A. Colclough.—p. 237.

New York State Journal of Medicine, New York

46:2223-2350 (Oct. 15) 1946

*Appendicostomy in Chronic Ulcerative Colitis. F. C. Yeomans.—p. 2269.
Submucous Lipoma of Colon: Report of 2 Cases. F. G. Runyeon.—p. *2272.*
Carcinoma of Colon: Resection and Immediate Primary Anastomosis. J. C. M. Brust.—p. 2277.
Infectious Hepatitis. H. M. Murphy.—p. 2281.
Management of Uncomplicated Peptic Ulcer. J. E. Berk.—p. 2286.
Complications of Amebiasis. Z. T. Bercovitz.—p. 2291.
Method for Evaluation of Calcium Therapy by Roentgenographic Technic. H. M. Feinblatt and E. A. Ferguson Jr.—p. 2297.
Hemorrhagic Vesicles and Bullae of Mucous Membranes of United States and British War Prisoners in Japan Subsisting on a Deficient Diet. W. T. Foley.—p. 2300.

Appendicostomy in Chronic Ulcerative Colitis.—Yeomans, in briefly reviewing the indications for appendicostomy, says that, in comparison with transverse ileostomy or complete colostomy, appendicostomy is a minor procedure. He describes the technic of appendicostomy and pleads that it be used as the initial measure when surgery proves necessary in chronic ulcerative colitis. He reports a case in which succinylsulfathiazole was introduced directly into the colon through the appendix stoma with excellent results.

46:2351-2462 (Nov. 1) 1946

*Management of Ambulatory Peptic Ulcer Patients with Protein Hydrolysates. W. F. Ruggiero, F. CoTui and A. A. Bianco.—p. 2395.
Medical Surveillance After Malarial Exposure. F. H. Shillito.—p. 2399.
*Surgical Treatment of Painful Phantom Limb: Preliminary Report. J. Browder and J. P. Gallagher.—p. 2403.
Traumatic Abdomen. R. F. Barber.—p. 2406.
Clinical Experiences with Chemical Hazards in Industry. G. H. Gehrmann.—p. 2409.
Evaluation of Disabilities. F. Leder.—p. 2412.
Diphtheria in Upstate New York, 1908-1946. H. S. Ingraham and R. F. Korns.—p. 2414.
Reconditioning—Management of Convalescence. R. W. Lippman.—p. 2421.

Management of Peptic Ulcer Patients.—Ruggiero and his co-workers administered protein hydrolysates to 134 ambulatory patients with peptic ulcer. The patients were given the protein hydrolysate in amounts sufficient to supply 0.6 Gm. of nitrogen per kilogram of body weight, and in addition dextrimaltose number 2 was given so as to supply between 40 and 50 calories per kilogram of body weight. In the 134 cases treated there were 16 failures. One hundred and eighteen patients no longer had any clinical symptoms or signs referable to peptic ulcer. They gained weight if they were underweight at the start of treatment. Their strength and desire to work increased. Insomnia and general nervousness disappeared.

Surgical Treatment of Phantom Limb.—Browder and Gallagher present a preliminary report of their study of 100 adult patients with absence of one or more extremities. Interruption of proprioceptive sensibility of the involved part seems to be the only probable method for the relief of enduring painful phantom limb and was accomplished by section of a dorsal column of the spinal cord in 2 patients with the typical syndrome of viselike fixed abnormal posture of a ghost foot and in 1 with phantom forearm and hand.

Pennsylvania Medical Journal, Harrisburg

50:1-120 (Oct.) 1946

Presidential Address. H. K. Petry.—p. 17.

50:137-216 (Nov.) 1946

New Method for Management of Spinal Analgesia. G. J. Thomas and P. A. Sica.—p. 137.
Differential Considerations Involved in Common Eruptions of Feet. B. Shaffer.—p. 144.

Physiological Reviews, Baltimore

26:479-630 (Oct.) 1946

Biotin and Avidin-Biotin Complex. R. Hertz.—p. 479.
Metabolism and Permeability of Normal Skin. H. O. Calvery, J. H. Draize and E. P. Laug.—p. 495.
Mechanism of Development of Obesity in Animals with Hypothalamic Lesions. J. R. Brobeck.—p. 541.
Carbonic Anhydrase in Tissues Other Than Blood. H. W. Davenport.—p. 560.
Preparation and Chemistry of Anterior Pituitary Hormones. A. White.—p. 574.
Organization of Respiratory Center. R. F. Pitts.—p. 609.

Public Health Reports, Washington, D. C.

61:1529-1560 (Oct. 25) 1946

Negro Mortality: II. Birth Rate and Infant and Maternal Mortality. Mary Gover.—p. 1529.
Removal of Cercariae of Schistosoma Mansoni from Water by Filtration Through Diatomaceous Silica in Small Model Filter. Myrna F. Jones and F. J. Brady.—p. 1538.

61:1561-1604 (Nov. 1) 1946

Establishment and Use of Fundamental Procedures in Tuberculosis Control. J. A. Myers.—p. 1563.
Persistence of Fluoroscopic Screens. W. W. Van Allen.—p. 1583.

61:1605-1640 (Nov. 8) 1946

*Rickettsialpox—A Newly Recognized Rickettsial Disease: I. Isolation of Etiological Agent. R. J. Huebner, Peggy Stamps and C. Armstrong.—p. 1605.
Skin-Sensitizing Properties of DDT for Guinea Pig. J. E. Dunn, R. C. Dunn and Barbara S. Smith.—p. 1614.
Sickness Absenteeism Among Male and Female Industrial Workers During 1945, with Note on Respiratory Epidemic of 1945-46. W. M. Gafafer.—p. 1620.

Rickettsialpox.—Huebner and his associates state that during July 1946 a peculiar febrile disease characterized by an initial lesion and an eruption of a vesiculopapular type was reported in a housing development in New York city. Because of a clinical resemblance to chickenpox and because the organism isolated from 1 patient has the morphologic and cultural characteristics of rickettsias, the name "rickettsialpox" is proposed. This organism produces illness in mice and guinea pigs and grows well in the yolk sacs of fertile eggs. Ether-extracted yolk sac antigens have been prepared which fix complement with convalescent serums drawn from typical cases. This reaction is apparently specific insofar as it has been tested, except for cross reactions with Rocky Mountain spotted fever.

Radiology, Syracuse, N. Y.

47:319-432 (Oct.) 1946

*Angiographic Diagnosis of Expanding Intracranial Lesions by Vascular Displacement. C. F. List and F. J. Hodges.—p. 319.
Pulmonary Adenomatosis. L. W. Paul and G. Ritchie.—p. 334.
*Retrograde Abdominal Aortography: Contribution to Study of Abdominal Aorta and Iliac Arteries. P. L. Fariñas.—p. 344.
Bilateral Osteochondritis Dissecans of Knee. R. H. *Hermanson.*—p. 349.
Heart Size from Routine Chest Films. P. C. Hodges.—p. 355.
Determination of Frontal Plane Area from Product of Long and Short Diameters of Cardiac Silhouette. G. S. Schwarz.—p. 360.
Esophagopleural Fistula Complicating Empyema. A. A. Brewer.—p. 371.
Use of Pyridoxine Hydrochloride in Radiation Sickness. H. L. Van Haltern.—p. 377.
Peroral Administration of Vitamin B_6 (Pyridoxine Hydrochloride) in Treatment of Radiation Sickness. A. Oppenheim.—p. 381.
Pyridoxine Hydrochloride (Vitamin B_6) in Control of Radiation Sickness: Preliminary Report. L. D. Scott and G. J. Tarleton.—p. 386.
Treatment of Radiation Sickness with Trasentine and Trasentine-Phenobarbital: Preliminary Report. J. C. Glenn Jr. and R. J. Reeves.—p. 392.
Simple, Accurate Fluoroscopic Method of Foreign Body Localization. H. W. Jamison.—p. 397.
Medical and Hospital Insurance Problems. A. W. Erskine.—p. 399.

Angiographic Diagnosis of Intracranial Lesions.—List and Hodges studied the displacement of intracranial blood vessels in 136 patients with space-occupying intracranial lesions by means of carotid or vertebral angiography. This method, which has proved to be reliable and safe, is suggested in certain expanding lesions of the base of the brain and the skull, and of the cerebral space-occupying lesions of the cerebral hemispheres which have been grossly localized, or at least lateralized, by other diagnostic methods. It is of special value for the differentiation of neoplasms and vascular processes.

Retrograde Abdominal Aortography.—Fariñas reports the principal inflammatory and degenerative processes encountered in the retrograde arteriographic study of the abdominal aorta and iliac arteries in 6 patients between the ages of 30 and 74 years. The method consists in exposure of the femoral artery by blunt dissection under local anesthesia at the level of Scarpa's triangle and its puncture with a trocar, through which a solution of diodrast is injected in two and a half to three seconds. The first film is taken when 40 cc. of the opaque substance has been injected and a second one immediately afterward. By aortography valvular kinks have been demonstrated for the first time whose surgical removal benefits greatly the circulation of both extremities.

47:433-550 (Nov.) 1946

*Eosinophilic Granuloma of Bone. C. C. Dundon, H. A. Williams and T. C. Laipply.—p. 433.
Osseous Manifestations of Eosinophilic Granuloma: Report of Nine Cases. J. B. Hamilton, J. L. Barner, P. C. Kennedy and J. J. McCort.—p. 445.
Congenital Atresia of Esophagus and Tracheo-Esophageal Fistula. J. F. Holt, C. Haight and F. J. Hodges.—p. 457.
Congenital Partial Atresia of Esophagus Associated with Congenital Diverticulum of Esophagus: Report of Case. R. P. O'Bannon.—p. 471.
Roentgen Rays in Prevention and Treatment of Infections. J. F. Kelly.—p. 478.
Radiologic Use of Fast Protons. R. R. Wilson.—p. 487.
Measurement of Radioactive Phosphorus in Breast Tumors in Situ; Possible Diagnostic Procedure: Preliminary Report. B. V. A. Low-Beer, H. G. Bell, H. J. McCorkle and others.—p. 492.
Clinical Study of Normal and Pathologic Motor Activity of Gallbladder: Preliminary Report. D. S. Dann and R. Koritschoner.—p. 494.
Liposarcoma: Case Report. N. A. McCormick.—p. 500.
Albers-Schönberg Disease—Family Survey. C. H. Kelly and J. W. Lawlah.—p. 507.
Eosinophilic Granuloma of Bone: Report of Case with Preoperative Roentgen Diagnosis. P. Riley.—p. 514.
"Iliac Horns" (Symmetrical Bilateral Central Posterior Iliac Processes) Case Report. E. E. Fong.—p. 517.

Eosinophilic Granuloma of Bone.—Dundon and his associates point out that the term "eosinophilic granuloma of bone" has been widely accepted for a peculiar destructive granulomatous lesion of bone. To 48 cases of eosinophilic granuloma of bone that have been collected from the literature 5 new cases are added. The majority of the patients have been men and the majority have also been under 20 years of age. Laboratory examination showed slight leukocytosis and occasionally eosinophilia. Roentgenographic examinations showed round, oval or irregular areas of decreased density. The lesions produced expansion of the bone in 5 cases and perforation of the cortex in at least 5 cases. Periostitis was observed in 14 cases, and 3 lesions had sclerotic margins. The early lesions appear cystic at gross examination, containing soft, friable, yellowish brown and red material. A variety of cells, including large numbers of eosinophils, are seen on microscopic examination, but the characteristic cell is a large mononuclear cell with granular cytoplasm. Treatment by surgical excision, curettage or irradiation has given good results.

Surgery, St. Louis

20:583-748 (Nov.) 1946

Development of Graduate Training Program in Surgery. S. C. Harvey.—p. 584.
*Experiences with Cortical Excisions for Relief of Intractable Pain in Extremities. G. Horrax.—p. 593.
Megacolon, Mechanisms and Choice of Treatment. W. J. M. Scott and Q. J. Serenati.—p. 603.
Arthrodesis of Subtalus and Midtarsal Joints of Foot: Historical Review, Preoperative Determinations and Operative Procedure. R. P. Schwartz.—p. 619.
Adamantinoma of Maxillary Sinus. C. A. Heatley.—p. 636.
Operative Procedure for Repair of Urethrodiverticulovaginal Fistula: Report of Two Cases. W. W. Scott and W. L. Ekas.—p. 645.
*Observations on Changes in States of Mental Depression and Tension Following Surgical Section of Certain Frontal Lobe Pathways. W. P. Van Wagenen.—p. 656.
Should We Standardize the Reconstruction After Pancreaticoduodenectomy? H. E. Pearse.—p. 663.
Repair of Nasal Losses. F. Young.—p. 670.
Problem of Cancer of Breast. S. J. Stabins.—p. 684.
Pilonidal Cyst and Sinus: New Method of Excision with Primary Closure. H. R. Ziegler, D. R. Murphey Jr. and E. M. Meek.—p. 690.
Cholecystoduodenocolic Membranes. E. B. Mahoney.—p. 704.
Clinical Manifestations of Lumbar Spinal Arachnoiditis: Report of Thirteen Cases. J. D. French.—p. 718.
*Perforation of Duodenal Ulcer During Roentgen Examination. J. A. Schilling.—p. 730.
Multiple Invasive Carcinomas of Large Intestine. G. B. Mider.—p. 744.

Cortical Excisions for Relief of Intractable Pain.—Horrax performed excision of the postcentral cortex in 2 patients who had been unrelieved by other forms of surgical intervention for painful extremities and in 2 patients whose pain was of cortical or thalamic origin and, therefore, presumably would have been uninfluenced by procedures on the spinothalamic tract or the sympathetic system. In the 2 patients with causalgia and phantom limb pain, respectively, the cortical excisions were followed by transient relief only. In the 2 patients who had central pain, relief was complete in 1 during the remainder of his life (ten months). In the other relief had been complete in the contralateral leg (one year and ten weeks, postoperatively) and was complete in the hand and arm for five months following the excision.

Surgical Treatment of Mental Depression.—Van Wagenen says that it has been argued that the relief from states of depression or tension results from a division of fibers running between the frontal cortex and the thalamus. Whether it is necessary to divide all the other association pathways in the frontal lobe is still open to question. The author describes several cases which in his opinion support the belief that the bilateral division of the white fiber pathways between the basal ganglion and the frontal lobe cortex is sufficient to secure relief from states of mental depression and tension and that section of more white fibers may be unnecessary.

Perforation of Ulcer During Roentgen Examination.—Schilling reports the case of a man aged 72 in whom during fluoroscopy barium was observed to streak out to the right and the left of the duodenal cap and promptly outline the right lower boundary of the peritoneal cavity. At operation a large perforation, 1.5 cm. in diameter, was found on the anterior portion of the first part of the duodenum. Everywhere there were flecks and small collections of whitish material. It was impossible to remove barium without damaging the serosa of the intestines. Accordingly, as much of the free fluid was aspirated as possible and the perforation was closed. Coincident with the ability to tolerate and retain food, the patient began to improve clinically. At follow-up examinations he appeared well. Barium sulfate was injected into the peritoneal cavity of 3 dogs. An immediate widespread diffusion of barium was noted roentgenographically. The dogs were sacrificed at one and one-half month intervals. Postmortem examination showed dense fibrous adhesions. The local microscopic reaction was one of fibrous encapsulation, lymphocytic infiltration and phagocytosis of barium by macrophages.

Texas State Journal of Medicine, Fort Worth

42:405-456 (Nov.) 1946

Reducing the Morbidity and Mortality in Surgery of Colon. A. O. Singleton and J. C. Kennedy.—p. 411.
Essentials to Adequate Gynecologic Patient Study. A. L. Dippel.—p. 417.
Use of Thiouracil in Treatment of Thyrotoxicosis. A. W. Harris and J. E. Robertson.—p. 422.
Acute Cardiac Emergencies. T. R. Harrison.—p. 428.
Acute Rheumatic Fever in Young Adults. H. C. Coggeshall.—p. 430.
Major Surgery of Suppurative Paranasal Sinuses. C. D. Winborn.—p. 434.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

54:411-466 (Nov.) 1946

Exophthalmos and Tissue Changes in Guinea Pig Following Administration of Thyroid Stimulating Hormone of Pituitary Gland. B. M. Dobyns.—p. 411.
Accessory Thyroids in Litter-Mate Pups and in Man: Their Relationship to Development of So-Called "Lateral Aberrant Thyroid" Tumors in Man. A. Graham.—p. 428.
*More Optimistic Approach to Cancer of the Thyroid. R. B. Cattell.—p. 444.
End Results of Thyroidectomy in Exophthalmic Goiter: Twenty Years' Postoperative Study of One Hundred Cases of Exophthalmic Goiter. A. S. Jackson.—p. 452.

Cancer of Thyroid.—Cattell thinks that the best means available for decreasing the incidence of malignant disease of the thyroid is the early removal of all discrete adenomas. Furthermore, by this method thyroid carcinoma will be discovered and removed in its earliest stage. Radical neck dissections are recommended for all patients with lateral aberrant thyroid. Removal of extensive malignant tumors of the thyroid, combined with tracheotomy and postoperative radiation therapy, should be carried out whenever possible. Thyroid cancer is curable in from 17 to 80 per cent of cases, depending on the grade or histologic type of malignant disease. These results warrant a more optimistic approach to the problem.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

19:437-480 (Nov.) 1946

Experiences in Ventriculography of Tumors Below Tentorium. E. Lysholm.—p. 437.
Roentgen's Discovery of X-Rays: Their Application to Medicine and Surgery.—p. 453.
Pelvigraphy. D. Jefferiss and E. Samuel.—p. 462.
Visualization of Foreign Bodies of Low Radio-Opacity. B. Mannheimer.—p. 469.
Aspiration Bronchography. D. C. Ritchie.—p. 471.
Giant Cell Tumors (Osteoclastomata) with Report of Case in Patella. L. M. Shorvon.—p. 474.
Calculator for Linear Radioactive Sources. F. S. Stewart.—p. 477.

British Medical Journal, London

2:639-680 (Nov. 2) 1946

Psychical Seizures. W. Penfield.—p. 639.
Blood Group Rh: Part II. Clinical Applications in Transfusion Therapy and in Hemolytic Disease of Newborn. D. F. Cappell.—p. 641.
Fenestration Operation for Otosclerosis. I. S. Hall.—p. 647.
Pituitary Hypothyroidism with Impaired Renal Function. R. A. Miller.—p. 650.
*Incidence of Ulcer in Hematemesis. E. H. Cluer.—p. 651.

Incidence of Ulcer in Hematemesis.—Cluer obtained radiographic confirmation of peptic ulceration in only 7 of 18 cases of hematemesis. All patients did well on a routine treatment and about five weeks of hospitalization. Three months later peptic ulceration could be confirmed by roentgenoscopy in only 7. Two others gave histories suggestive of peptic ulceration, but radiographic evidence was not obtained. The diet, rest in bed and medicines were probably responsible for healing the ulcer and subsequent negative films. Two further cases proved to be due to cirrhosis of the liver, the hematemeses possibly being the result of ruptured esophageal varices or congestion consequent on portal obstruction. One patient had hypertension with severe epistaxis, and some of his hematemesis probably was caused by swallowed blood. The remaining 6 patients had no history of dyspepsia and were perfectly fit up to or just before the time of hematemesis. In all these cases a later x-ray film revealed a perfectly normal stomach and duodenum.

Journal of Mental Science, London

92:667-878 (Oct.) 1946. Partial Index

Legal Aspects of Psychiatry: Crime and Punishment. W. N. East.—p. 682.
Social Aspects of Psychiatry: Importance of Statistics. L. S. Penrose.—p. 713.
*Report on 100 Female Patients Treated by Prefrontal Leukotomy. C. S. Parker.—p. 719.
Laughter in Epilepsy, with Some General Introductory Notes. J. Roubicek.—p. 734.
Sleep-Walking and Sleep Activities. M. Narasimha Pai.—p. 756.
Fractures of Dorsal Vertebrae in Epilepsy and Convulsion Therapy. G. Caplan.—p. 766.

Prefrontal Leukotomy in 100 Female Patients.—Parker says that experience on 100 patients with prefrontal leukotomy reveals that symptoms of true melancholia can be removed by the operation in an extremely high percentage of cases, even in old standing cases and after failure of other methods. In schizophrenia, paranoia and paraphrenia it is doubtful whether leukotomy is more efficacious than other methods of treatment.

Lancet, London

2:627-662 (Nov. 2) 1946

*Influenza B in 1945-1946. J. A. Dudgeon, C. H. Stuart-Harris, R. E. Glover and others.—p. 627.
Influenza B Among West Indians: Outbreaks in Bahamas and in England. W. P. U. Jackson.—p. 631.
Icterus Gravis Neonatorum: End Results of Treatment by Blood Transfusion. H. Third.—p. 635.
Detection of Amino Acids in Urine and Other Fluids. C. E. Dent.—p. 637.
Leukotomy Technic. D. G. Duff.—p. 639.

Influenza B in 1945-1946.—Dudgeon and his associates say that after influenza probably due to virus B appeared in the Netherlands and Belgium in December 1945 a moderately extensive outbreak of a mild influenza appeared in Britain in January. Serologic evidence indicated that 34 per cent of the cases were due to influenza virus B, but since it is known that not all cases of B virus infection show a specific serologic response it is likely that virus B was the major cause of the outbreak. Ferrets did not show a febrile reaction when inoculated with 1946 B viruses, but strains were successfully established by amniotic inoculation of fertile eggs. They were serologically rather distinct from the standard (Lee) B virus but very closely related to two strains isolated in Australia in November 1945.

Acta Medica Scandinavica, Stockholm

125:1-96 (Aug. 1) 1946. Partial Index

Investigations of Epinephrine Concentration in Blood: II. Normal Concentration of Epinephrine in Blood in Man. M. Kobro.—p. 1.
Carotic Pressure in Ulcer Patients. K. Ørning, C. Sommerfelt and W. Fredriksen.—p. 8.
Comparison Between Leads from the Extremities, Precordial Leads CF_2 and IVF, and Nehb's Leads, with Special Regard to Diagnosis of Infarction. J. Frost.—p. 15.
Investigations on Behavior of Serum Iron in Hyperchromic Sprue Anemia. S. Frandsen and J. Kringelbach.—p. 29.
*Pathologic Anatomy of Plummer-Vinson Syndrome. M. Savilahti.—p. 40.
Quantitative Determination of Organic Acids in Feces. A. V. Møller and E. Kirk.—p. 55.
Familial Occurrence of Gastroduodenitis. H. F. Helweg-Larsen.—p. 63.
*Toxic Diffuse Goiter in Males. K. Larsen.—p. 71.

Plummer-Vinson Syndrome.—Savilahti reports 2 cases of Plummer-Vinson syndrome from the medical and pathologic department of the Kivelä Hospital in Helsinki: 1. A woman aged 77 had nausea and difficulty in swallowing solid food for several years. Her skin was extremely pale, with a yellow tinge. The mucous membranes also had a pale appearance. The tongue was smooth and shiny. The severe hypochromic anemia and dysphagia disappeared after four months of iron therapy. In the wall of the esophagus below the aortic arch a dilatation and a diverticulum were revealed on x-ray examination. These changes were still observed when dysphagia had disappeared after treatment. 2. A woman aged 71 had difficulty in swallowing solid food for several years before admission. When admitted she had right lobar pneumonia. There were rhagades at the corners of the mouth and leukoplakia in the mucosa of the lower lip. The tongue was dry, smooth and atrophic. She died of pneumonia. Necropsy revealed that the tongue was nearly entirely depapillated. Leukoplakia was present in the wall of the larynx. The epithelium of the esophagus showed local atrophy. Signs of chronic inflammation were also noted. The muscular wall was atrophic about the middle of the esophagus, and the connective tissue was infiltrated by round cells. Dysphagia in this condition is evidently due to muscular degeneration in the esophagus. It is also possible that some of the diverticula and dilatations of the esophagus arise from similar causes, as they probably did in case 1.

Toxic Diffuse Goiter in Men.—Larsen has noted a pronounced increase in recent years in the number of cases of toxic diffuse goiter in the medical department B of Rigshospital in Copenhagen. The increase has been relatively greater in men. An increase in the number of "masked" cases of toxic diffuse goiter may be considered responsible for the relatively greater incidence of this disease in men. Cases of toxic diffuse goiter may be described as masked cases in which the characteristic symptoms such as the enlargement of the thyroid, exophthalmos and the basedowian habitus are absent or are not pronounced, while less characteristic symptoms such as loss of weight, cardiac symptoms, gastrointestinal complaints and glycosuria predominate and suggest a different condition, or in which the typical symptoms are masked by symptoms of an associated pathologic condition. In 174 cases of toxic diffuse goiter the condition was masked in 26 of 81 men and in 11 of 93 women. A difference was not observed in the average age of the men and women on admission, but the age distribution showed a characteristic difference between the two sexes: for the men the maximum incidence was found between the ages of 40 and 49, while the incidence among the women was distributed evenly among the ages of 20 and 59 years.

Book Notices

Handbook of Diet Therapy. Written and compiled by Dorothea Turner for the American Dietetic Association. Cloth. Price, $2. Pp. 112. University of Chicago Press, 5750 Ellis Ave., Chicago 37, 1946.

This handbook on therapeutic diets has been prepared for the Diet Therapy Section of the American Dietetic Association. It represents a new and very sound technic for the selection of special type diets in which the diet is evaluated on the basis of the patient's nutritional needs, the method of planning is simplified and practical considerations of its acceptability to the patient are taken into account. The terminology and classification of therapeutic diets are simplified as well. These highly desirable objectives have been attained by the rational expedient of adopting the basic normal diet pattern which meets the recommended dietary allowances in all respects to the special therapeutic need. In following this plan, substitutions of appropriate types or forms of foods may be made in the normal pattern without sacrificing nutritional adequacy. This approach to dietary treatment removes the mysticism, faddism and confusion which have reigned for so long.

In the handbook there are some twelve normal-adapted diets outlined, as well as others for conditions of special nutritional requirements as in pregnancy, lactation and childhood. For each type a discussion of the objectives of the diet is given, and suggestions are given for accomplishing some changes without actual revision of the food pattern. A tabular chart is shown for each special type diet giving the nutritive contribution of each food item with the totals to demonstrate the nutritional completeness. These dietary patterns found in the handbook are not menu lists, since they consist of an outline for one day's food intake. They provide adequate essential nutrients but not necessarily adequate calories. Menu variety must be afforded by making substitutions and additions from the tables of food composition found in the appendix, to meet the needs of individual patients.

Since the book presents an approach to diet therapy which is new and in full accord with modern nutritional thought, it should be familiar to every one concerned with the prescribing of diets. It can be recommended as a reference book which has much practical information of value to the physician.

Allergy. By Erich Urbach, M.D., Chief of Allergy Department, Jewish Hospital, Philadelphia, and Philip M. Gottlieb, M.D., Associate in Allergy Department, Jewish Hospital, Philadelphia. Second edition. Fabrikoid. Price, $12. Pp. 968, with 412 illustrations. Grune & Stratton, 381 4th Ave., New York 16, 1946.

This is an excellent reference book on allergy for the physician who has had some fundamental training in allergy or for the specialist in allergy or related fields. It is not to be recommended for the physician whose training in allergy has been limited. The present edition is a thorough revision of the first. The change in format through the use of a double column makes it more easily read. The new subjects added are not too important in allergy. The improved organization of the general subject matter and the enlargement of these subjects is indicated by the use of over thirty-three hundred references—a thousand more than in the previous edition. The value of this work is that it covers thoroughly the entire field, not just the respiratory conditions.

Many of the faults of the first edition are unfortunately still carried over into the revised work. First is the insistence of the authors on their own particular terminology for immune and allergic reactions. Such cumbrous and unfamiliar terms as pathergy, parallergy, metallergy, allergization, deallergization and skeptophylaxis are used throughout the text. These have not been accepted in the American literature despite the efforts of both authors in various publications.

Despite the fact that "propeptan" desensitization has not been found of value by American workers, the authors recommend protein digests as their first choice for the treatment of food and inhalant allergy. Other methods of therapy are fully described, but it would take an experienced worker in allergy to discriminate between usually accepted methods and those strongly recommended by the authors.

While most of the illustrations are well chosen and generally clear, some are pointless. The pictures of a tuberculin syringe, of two scarifiers and of two types of boxes containing "diagnostic sets" belong in a sales catalogue rather than in a reference book. Redundance of illustration is exemplified by at least eight photographs of angioneurotic edema and eleven of urticaria due to different agents. No great difference in morphologic appearance is seen in these photographs.

Good clinical judgment is absent in some of the recommendations for pollen therapy. The "propeptan" prescription for the oral pollen includes not only the two ragweeds and cocklebur but goldenrod and dahlia as well (p. 556). Similarly (p. 884) the authors include in their test sheet for pollens a number of materials that are either rare as causes of symptoms or are typical insect borne pollens. Thus the pollen of pine (1 case reported in the entire literature) is listed for testing among the tree pollens; dahlia, daisy, sunflower, corn and crab grass among the pollen of the late summer season, and dandelion, oat, rye and wheat among the pollens of the early summer season.

If these and similar peculiarities and errors of this book were discounted by the experienced reader he would find this a well organized, up-to-date reference book. The general practitioner or the beginner in allergy would hardly find this a suitable book unless it was supplemented by a more orthodox textbook.

Stedman's Practical Medical Dictionary of Words Used in Medicine with Their Derivation and Pronunciation Including Dental, Veterinary, Chemical, Botanical, Electrical, Life Insurance and Other Special Terms; Anatomical Tables of Titles in General Use, the Terms Sanctioned by the Basle Anatomical Convention; the New British Anatomical Nomenclature; Pharmaceutical Preparations Official in the U. S. and British Pharmacopœias or Contained in the National Formulary; and Comprehensive Lists of Synonyms. Edited by Norman Burke Taylor, M.D., F.R.S., F.R.C.S., in collaboration with Allen Elsworth Taylor, D.S.O., M.A. Sixteenth edition with Etymologic and Orthographic Rules. Fabrikoid. Price, $7.50 with thumb index (without index $7). Pp. 1,291, with illustrations. William Wood & Company (Division of Williams & Wilkins Company), Mount Royal and Guilford Aves., Baltimore 2, 1946

The sixteenth edition of Stedman's Practical Medical Dictionary has been edited by Dr. Norman B. Taylor of the University of Toronto. He points out in the preface that hundreds of new words have been added, many of which pertain to war medicine, tropical diseases and physiologic and biochemical topics. Dr. Taylor did not consider it desirable, however, to include all the names of new proprietary drugs that have evolved in recent years. The book is prefaced with an excellent essay on medical etymology indicating the origin of most medical terms from Greek and Latin roots. The volume is dated by its failure to include the words streptomycin, patulin and subtilin, recently announced antibiotic molds. Testosterone is said to be obtained from testicular tissue, and there is no reference to synthetic substances. Although new proprietary drugs are not included, there are still references to such "old timers" as Brown-Séquard's antineuralgic pill and Gray's glycerin tonic. The dictionary has had a long and useful career and provides much useful information such as is required by those who know how to use dictionaries.

Actions and Uses of Drugs: A Textbook for Nurses. By Windsor C. Cutting, M.D., Professor of Therapeutics, Stanford University School of Medicine, Stanford University, California. Cloth. Price, $3. Pp. 326, with 27 illustrations. Stanford University Press, Stanford University, California, 1946.

This textbook, designed for nurses, marks a distinct departure from the usual approach to pharmacology and materia medica. Too often the textbooks in this field attempt to present so much detail that the student nurse either grasps none of it or else becomes so impressed with her apparent grasp of the subject that she considers herself an expert on drugs. Nurses should neither compound nor prescribe, but they should have an understanding of the drugs they administer under the direction of the physician. This textbook is ideally adapted to provide such an understanding without burdening students with unnecessary detail or encouraging them to become "little physicians." The book opens with a clear discussion of the types of therapy, the difference between pharmacology and pharmacy, the sources of information about drugs and the manner in which the actions of drugs are studied. It proceeds to a consideration of locally acting drugs followed by a description of those administered for their systemic actions. For each drug a brief description of its source, mode of action, principal uses and ordinary dosage is given. The text is well illustrated with simple and readily understandable diagrams. This volume can be heartily recommended for use in all nursing schools.

Diagnostic Examination of the Eye: Step-by-Step Procedure. By Conrad Berens, M.D., F.A.C.S., Professor of Clinical Ophthalmology, Columbia University, New York, and Joshua Zuckerman, B.Sc., M.D., C.M., Instructor in Ophthalmology, New York University, New York. Fabrikoid. Price, $15. Pp. 711, with 410 illustrations. J. B. Lippincott Company, 227-231 S. 6th St., Philadelphia 5, 1946.

This describes the various procedures in conducting a complete and thorough eye examination and is of value chiefly for the young specialist. The first 38 pages are devoted to history taking and presents record forms. Each step from inspection through the use of special instruments is described and the use of the instruments given in detail. The various diseases and anomalies to be found in each anatomic segment of the eye, adnexa and nervous pathways are mentioned. No differential diagnosis or treatment is attempted. In part III eye standards for the military, federal, civil service, aviators and motor vehicle drivers and classification of blindness is given. While most instruments are mentioned and their use is described, the authors do not indicate preference for any given instrument. Less than half a page is devoted to the Nagel Anomaloscope, the only really accurate method of testing color vision. The book can in no way be considered a textbook of ophthalmology, since anatomy, pathology, differential diagnosis, therapy and surgery are omitted. It will serve the purpose for which it was intended, namely as a guide for the routine complete ophthalmic examination and a ready reference to the use of instruments for supplemental or more detailed ocular study.

Inheritance of Harelip and Cleft Palate: Contribution to the Elucidation of the Etiology of the Congenital Clefts of the Face. By Poul Fogh-Andersen. Denne Afhandling er af det lægevidenskabelige Fakultet antaget til offentlig at forsvares for den medicinske Doktorgrad, København. *Translated from the Danish by Elisabeth Aagesen. Paper.* Pp. 266, with 75 illustrations. Nyt Nordisk Forlag Arnold Busck, Kjøbmagergade 49^1, København K, 1942.

The work reported in this monograph was carried out in Denmark from 1939 to 1941. It constitutes an extensive study of the genetic factors related to harelip and cleft palate. From the large Danish material it was concluded that 25 per cent of those affected have harelip alone, 50 per cent have harelip and cleft palate, and 25 per cent cleft palate alone. The author states that, contrary to the prevailing view, there are two different malformations without genetic connection, namely harelip with or without associated cleft palate, and isolated cleft palate. The former, he believes, is hereditary in most cases, whereas in isolated cleft palate there is probably a considerable admixture of nonhereditary cases. Although a chapter on theories and etiology of cleft palate is included in the monograph, reference is not made to the possible role of German measles during early pregnancy. This monograph will henceforth be required reading for all those conducting studies on the genesis of harelip and cleft palate.

The Normal Encephalogram. By Leo M. Davidoff, M.D., Professor of Clinical Neurological Surgery in the College of Physicians and Surgeons, Columbia University, New York, and Cornelius G. Dyke, M.D. Second edition. Cloth. Price, $5.50. Pp. 232, with 155 illustrations. Lea & Febiger, 600 S. Washington Square, Philadelphia 6, 1946.

Since the first edition, now long out of print, was published in 1937 the junior author, a radiologist, has died and Dr. Davidoff, a neurosurgeon, is alone responsible for the second edition. The general character of the book in the new printing remains unchanged, but old illustrations have been replaced by new, the text is extended by eight pages and the bibliography has been revised and brought up to date. Revision has been expertly done, and the new material adds greatly to the value of the book. It is hoped that the companion volume mentioned in the preface, "The Abnormal Encephalogram," half finished at the time of Dr. Dyke's death in 1943, will be prepared shortly for publication. Such a volume, urgently needed and long anticipated by the medical profession, would be an ideal companion to "The Normal Encephalogram."

Textbook of Pediatrics (Mitchell-Nelson). Edited by Waldo E. Nelson, M.D., Professor of Pediatrics, Temple University School of Medicine, Philadelphia. With the Collaboration of Forty-Nine Contributors. Fourth edition. Cloth. Price, $10. Pp. 1,350, with 333 illustrations. Philadelphia & London: W. B. Saunders Company, W. Washington Square, Philadelphia 5, 1946.

This textbook of pediatrics comes as a memorial to Dr. A. Graeme Mitchell, who died in 1941. Forty-nine contributors under the editorship of Dr. Waldo E. Nelson take the responsibility for the book. It is a successor to the Griffith and Mitchell textbook. The work has been completely rewritten and brought together in a single volume using the double column method of presentation. Various sections of the work cover every aspect of pediatrics, beginning with the care and evaluation of the well child and then taking up the sick, the newborn, the premature, nutritional disturbances, malformations, infectious diseases and so on. The infectious diseases are grouped as bacterial, spirochetal, virus, rickettsial, mycotic and parasitic conditions. The broadening of the group of virus diseases is significant. The selection of authors and the quality of the material are of an exceedingly high order. The material is presented in succinct form, there are many excellent illustrations, and suggested bibliographies supplement each of the contributions. An elaborate index adds to the usefulness of this excellent book.

The New Science of Surgery. By Frank G. Slaughter, M.D. Cloth. Price $3.50. Pp. 286. Julian Messner, Inc., 8 W. 40th St., New York 18, 1946.

Dr. Slaughter is the author of at least five novels. He has been a practicing surgeon both in civil life and under military conditions. He writes easily, so that his book is a fine contribution to better public information regarding the accomplishments of modern surgery and the investigations and discoveries which led to those accomplishments. There are excellent chapters on surgery of the chest and the heart, on the use of refrigeration and on brain surgery. Later chapters consider burns, plastic surgery and psychosomatic surgery. Of special interest at this time are the final chapters entitled "Is Surgery Too Expensive?" and "Medicine in the Postwar World." The final chapter is a reprint of an article written by the author in 1940 in which he proposes a system of medical care involving clinical practice by groups with government support where necessary and with a sort of combined compulsory and voluntary health insurance system.

Notes on Nursing: What It Is, and What It Is Not. By Florence Nightingale. A facsimile of the first edition published in 1860 by D. Appleton and Co., New York. With a foreword by Virginia M. Dunbar, Dean, Cornell University, New York Hospital School of Nursing and Director of the Nursing Service, New York Hospital, New York City. Cloth. Price, $2. Pp. 140. D. Appleton-Century Co., Inc., 35 W. 32d St., New York 1, 1946.

Notes on Nursing: What It Is, and What It Is Not. By Florence Nightingale. [Facsimile of first American edition published in 1860 by D. Appleton and Co., New York.] Cloth. Price, $1.35. Pp. 79. J. B. Lippincott Company, 227-231 S. 6th St., Philadelphia 5, 1946.

These are two editions of "Notes on Nursing: What It Is and What It Is Not," by Florence Nightingale. The two publishers have simultaneously produced facsimiles of this book by Florence Nightingale. The book by D. Appleton-Century Company has a preface by Virginia M. Dunbar and is a facsimile of the first American edition which was published in 1860 by Appleton and contains the Appleton advertisements that were then published in the end of the book. The book by Lippincott has a foreword by Annie W. Goodrich and is a facsimile of the first London edition printed in 1859, including the advertisements of the publisher at the end of the book.

The Drama of Sex. By James Lincoln McCartney, M.D., F.A.C.P., Commander (MC) U.S.N.R. Cloth. Price, $2.50. Pp. 147, with illustrations. Stratford House, Inc., 52 Vanderbilt Ave., New York 17, 1946.

Here is another book of advice to the lovelorn in modern dress. Its author has put under his name on the title page sixteen lines of description of himself which indicate that he ought to know what he is talking about. The book follows standard lines in its descriptions of the tissues involved in sex and their functions. It attempts to explain psychosexual development but must perforce get into the terminology of freudian concepts. In his suggestions as to sexual initiation following marriage the author becomes lyrical without abusing the facts. There are chapters on marriage adjustment and pregnancy which follow standard lines and a final chapter on planned parenthood which tells most of what is now known on birth control.

The Human Ear in Anatomical Transparencies. Descriptive Text by Stephen L. Polyak, M.D., Professor of Anatomy, University of Chicago, Chicago. Anatomical Transparencies and Illustrations by Gladys McHugh, Medical Illustrator, University of Chicago Clinics. Anatomic Preparations by Delbert K. Judd, M.D., Assistant Professor Otolaryngology, University of Chicago. Published under the auspices of Sonotone Corporation. Fabrikoid. Price, $10.50. Pp. 136, with 83 illustrations. T. H. McKenna, Inc., 882 Lexington Ave., New York 21, 1946.

The use of anatomic transparencies in the teaching of the anatomic relations between the structures has now been well established. The book on the human ear is an elaborate production requiring several years for its accomplishment. Specimens were expertly dissected as a basis for the colored paintings by Miss Gladys McHugh. Many of the faculty of the University of Chicago School of Medicine cooperated in the preparation of the manuscript. The section on the evolution of the ear and hearing is a fascinating addition to the strictly anatomic text. No better guide to the structure of all the organs involved in hearing is thus far available. An extensive bibliography completes the work.

Xenopus Laevis: A Bibliography. Compiled by H. Zwarenstein, M.A., D.Sc., F.R.S.S.Af., N. Sapeika, B.A., M.B., Ph.D., and H. A. Shapiro, B.A., Ph.D, M.B. Cloth. Price, 10s. Pp. 51. Published for the University of Cape Town by the African Bookman, P. O. Box 3115, Cape Town, S. A., 1946.

This little volume covers the entire literature on Xenopus levis, the South African clawed frog. Before 1933 this animal was used for experimental physiology by Jolly and Hogben. In 1933 Shapiro and Zwarenstein were the first to report on the use of Xenopus levis as a test animal for the diagnosis of human pregnancy. Since then many publications have appeared all over the world and therefore this bibliography was thought to be useful. It is a most complete piece of work and should be of value to all laboratory workers interested in the use of this amphibian. The literature on the history of anatomy, physiology, reproduction, breeding, pharmacology, bacteriology and parasitology of this frog is covered.

Autour du problème du cancer. Par le Docteur J. M. Montpellier, professeur d'anatomie pathologique et d'oncologie humaine et comparée a la Faculté mixte de médecine et de pharmacie d'Alger. Ouvrage honore d'une subvention du gouvernement général de l'Algérie. Paper. Pp. 337, with 12 illustrations. Librairie Ferraris, 43 rue Michelet, Algiers, 1944.

The author discusses the more general aspects of the cancer problem. Attention is given various biologic concepts concerning the etiology of cancer, and then in turn the precancerous state, the role of trauma and carcinogenesis in general are discussed. Some consideration is given to the question of metastasis and also to the spontaneous regression of cancer. Principles of therapy are presented in a generalized manner. No attempt is made to discuss the various forms of neoplasia individually. The entire book deals in generalities, with little specificity. Mention is made of recent experimental progress, and a plan for individual and mass prophylaxis is presented.

Infiltrazione novocainica del plesso celiaco: Applicazioni terapeutiche. Dal Dott. Renato Rossi, specialista in chirurgia generale, Istituto di clinica chirurgica e terapia chirurgica generale della Università di Torino. Prefazione del Prof. A. M. Dogliotti. Paper. Pp. 79. Edizioni I. T. E. R., Industrie Tipografico Editoriali Riunite, Turin, 1945.

The preface by Professor A. M. Dogliotti is followed by an introduction and technical observations. The chapters that follow cover the therapeutic infiltration with procaine hydrochloride of the celiac plexus, the block with procaine of the celiac plexus as a modifier of secretion of epinephrine, arterial tonus and glycoregulation, the infiltration with procaine of the celiac plexus in renal diseases, the infiltration with procaine of the celiac plexus in visceral apoplexies, the infiltration with procaine of the celiac plexus in acute abdominal syndromes and the infiltration with procaine of the celiac plexus in the practice of anesthesia. A bibliography follows.

Diseases of the Basal Ganglia and Subthalamic Nuclei. By D. Denny-Brown, M.D., C.H.B., Dr. Phil., Professor of Neurology, Harvard University, Boston. Edited by Henry A. Christian, A.M., M.D., LL.D. [Reprinted from Oxford Loose-Leaf Medicine with the Same Page Numbers as in That Work.] Cloth. Price, $2.50. Pp. 261-302 (74). Oxford University Press, 114 Fifth Ave., New York 11, 1946.

This brief monograph is a reprint from Oxford Loose-Leaf Medicine. It presents in readily available form the symptoms, signs, pathology and available treatment of the more common disorders of this part of the nervous system. These include the various forms of parkinsonism, hepatolenticular degeneration, dystonia musculorum deformans, double athetosis and Huntington's chorea. The confusion and incompleteness which characterize the discussions of the anatomy and physiology of this region are a measure of our ignorance in this field. One of the large neurologic problems which awaits thoroughgoing investigation and elucidation is the structure and function of the basal ganglions in primates. It is to be hoped that in the not too distant future we shall not have to be content with so imperfect a presentation as present day circumstances impose on us.

Introduction to Clinical Neurology. By Gordon Holmes, M.D., F.R.S. Cloth. Price $4. Pp. 183, with 37 illustrations. William Wood and Company, Mt. Royal & Guilford Aves., Baltimore 2, 1946.

Outstanding teachers in any field are rare, and in a limited field like clinical neurology are even more uncommon. Gordon Holmes is one of the world's most justly famous teachers of his subject. Many an American has been fortunate enough to benefit by a clerkship under Dr. Holmes at the National Hospital for Nervous Diseases at Queen Square and to enjoy weekly ward rounds with him. To those this book will rekindle many fond memories. Here set forth in concise clear statements, which have always characterized the English clinical neurologists, are the many things which Gordon Holmes by word and deed taught us. This book will prove valuable, as well as enjoyable, to every one; but the young student of neurology in particular will benefit from this excellent introductory textbook by the master of the subject. It is not a textbook of clinical neurology. Disease entities, diagnosis and treatment are not discussed. This is the proper approach to the neurologic patient and his disease. Here are presented the significance of the signs and symptoms of neurologic dysfunction. The reader is told how a neurologic examination should be conducted and how to interpret the results. This is and will continue to be one of the classics of neurology.

The Adventures of Jimmy Martin, Stowaway. By David Polowe. Cloth. Price, $2. Pp 160. Colt Press, 549 Main St., Paterson 3, New Jersey, 1946.

This book is an interestingly written account of a 14 year old boy who stowed away on an American ship and ran into adventures with spies, German submarines and the like. It does not contain anything of medical interest other than what the shipping articles provide regarding supplies of food to the enlisted men.

Threescore Years and Ten: A Narrative of the First Seventy Years of Eli Lilly and Company, 1876-1946. By Roscoe Collins Clark. Privately printed. Cloth. Pp. 132, with illustrations. Eli Lilly and Company, Indianapolis 6, 1946.

For those who are interested in the growth of the modern drug industry this book will provide an informative outline of one member. Obviously the volume will have the greatest appeal for those who are members or friends of members of the Lilly organization.

Doctor Destiny. By Edward R. Janjigian. Fabrikoid. Pp. 211. Edinburg, Indiana: The Author, 1946.

Doctors who undertake fiction are confronted with the double task of competence in both medicine and authorship. This is a novel about a schizophrenic who wanted to be a doctor which unfortunately does not meet the standard of competence in novel construction and reproduction of dialogue.

Report of a Better Breakfast Project Week of January 14, 1946: A Community Program Sponsored by The Council on Nutrition of The Public Health Federation of Cincinnati and Hamilton County, Ohio. Paper. Pp. 152, with illustrations. Cincinnati: Public Health Federation; Chicago: Cereal Institute, Inc., 1946.

This is a report on a community project in which twenty-eight agencies and commercial groups participated. Methods are briefly described and the printed material used is included.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

DIFFERENTIAL DIAGNOSIS OF GLYCOSURIA

To the Editor:—Please answer the following questions on the differential diagnosis of glycosuria: 1. If a single urine specimen shows sugar and a blood sugar determination at the same time is 170 mg. per hundred cubic centimeters or over, can a diagnosis of diabetes mellitus be made regardless of when or what the patient has eaten? 2. Is a diagnosis of "alimentary glycosuria" possible? If glycosuria appears after eating and the blood sugar is normal, is that not renal glycosuria? If glycosuria appears after a meal and the blood sugar is above an arbitrary figure, such as 170 mg. per hundred cubic centimeters, is that not true diabetes? 3. If a single examination reveals glycosuria but a glucose tolerance test is normal without glycosuria, would the original glycosuria be called "emotional glycosuria"?

M.D., New York.

Answer.—1. It would be hazardous to make a diagnosis of diabetes mellitus on the basis of a single blood sugar figure, particularly if the blood has been drawn after eating. Transient changes in blood sugar concentration not due to diabetes, as well as technical errors in blood analysis, are altogether too common to permit a diagnosis to be made on such arbitrary grounds.

2. A diagnosis of "alimentary glycosuria" does not mean much. The findings which lead to this diagnosis often indicate early diabetes mellitus, but more data than a single blood sugar determination are necessary before a diagnosis of diabetes mellitus can be made. Persistent glycosuria accompanied by consistently normal blood sugar levels may be accepted as renal glycosuria. The sugar must be identified as glucose, the blood sugar must be proved to be normal even after dietary attempts to raise it, and other criteria must be satisfied before a diagnosis of renal glycosuria is permissible. (The answer to the second question in 2 is given in 1.)

3. The accidental discovery of sugar in the urine followed by a normal glucose tolerance test might be due to emotional causes. Certainly emotion is a common cause of transient glycosuria and hyperglycemia. However, early diabetes mellitus which is so mild that sugar fails to appear on administration of a standard glucose meal cannot be excluded. Experience not uncommonly finds true diabetes following normal glucose tolerance tests. The passage of time with repeated attempts to prove or disprove the existence of diabetes is the only safe diagnostic method to apply in doubtful cases. It is also possible for other melliturias, such as pentosuria, to appear transiently and be followed by a normal glucose tolerance curve. Hyperthyroidism and certain drugs cause transient glycosuria. Emotional glycosuria is therefore only one of a number of conditions which might exist, including diabetes mellitus, when the discovery of sugar in the urine is followed by a normal glucose tolerance curve.

CATARACT SURGERY IN PATIENT WITH HEAD TREMOR

To the Editor:—A man aged 67 who was operated on for a senile cataract of the right eye six months ago with good results has a head tremor due to arteriosclerosis of the basal ganglions. He is otherwise in good health. Would it be advisable to operate on the left eye when the cataract becomes mature? If so should the lens be removed in a two stage operation or should only iridectomy be performed to prevent possible glaucoma?

M.D., Pennsylvania.

Answer.—Since the result of operation on the right eye was good there would seem to be no contraindication to performing a similar procedure on the left. A one stage operation is generally considered preferable, and with present day methods of intracapsular extraction and corneoscleral sutures most complications are avoided.

DYSTONIA MUSCULORUM DEFORMANS

To the Editor:—Two sisters aged 24 and 22 years were perfectly well until ten years ago, when they became bedridden. A diagnosis of dystonia musculorum deformans was established two years ago. They were treated with 36 grains (2.3 Gm.) of quinine per day for a while. The disease is gradually getting worse. Please suggest further treatment.

M.D., New Jersey.

Answer.—There is no accepted form of successful treatment for dystonia musculorum deformans.

PROBABLE GASTROINTESTINAL LESION

To the Editor:—A man aged 55, a plumber, five years ago developed pain in the back, generalized weakness and vague abdominal distress for one month. Since then he has had the following symptoms of varying severity: (1) periods of persistent epigastric soreness with occasional severe distress relieved by milk, occurring in midafternoon but never in the morning or evening; (2) loss of 20 pounds (9 Kg.) weight the first year of illness and 5 pounds (2.3 Kg.) since then (the patient now weighs 141 pounds, or 64 Kg.); (3) gradual development of numbness in the fingers and toes and difficulty in buttoning his clothing; (4) increasing weakness, which caused him to stop work six months ago. Six weeks ago the patient was hospitalized because of a sudden severe gastrointestinal hemorrhage, manifested by a copious tarry stool and hematemesis. Transfusion was required. The hemorrhage occurred after two days of back pain for which the patient had taken several doses of acetylsalicylic acid and two strong laxatives. Since discharge from the hospital gastrointestinal symptoms have been absent. After an initial milk and alkali ulcer diet the patient now eats everything without distress. Physical examination in 1942 revealed moderate deep tenderness in the epigastrium, absent patellar, achilles and abdominal reflexes, negative Babinski sign, positive Romberg's sign, no ataxia and questionably reduced vibration sense. The blood pressure was 95-100/70. Present findings are the same with added evidence of moderate weight loss. There are no skin or tongue changes. Complete gastrointestinal roentgenograms eight months ago were negative and an upper gastrointestinal study four weeks after the hemorrhage was also negative. X-ray examination of the lumbodorsal spine was negative except for increased calcified densities in the mediastinum and adjacent lung fields. Fluoroscopy of the chest was negative. Blood Kahn tests in 1941 and 1946 were negative. Spinal fluid examination in 1946 showed leukocytes 2, erythrocytes 58, protein 51 mg. per hundred cubic centimeters, Kahn test negative, colloidal gold test 0000000000. Ewald gastric analysis showed no free acid, total acid 11 and no blood. Urinalysis was negative on six occasions. Blood chemical studies revealed the icterus index 7, sugar 102 mg. per hundred cubic centimeters, chlorides 468 mg. per hundred cubic centimeters, cholesterol 286 mg. per hundred cubic centimeters, calcium 11 mg. per hundred cubic centimeters. Blood counts in 1941 revealed erythrocytes 4,700,000, hemoglobin 90 per cent, leukocytes 10,500; in December 1945 erythrocytes 5,100,000, hemoglobin 95 per cent, leukocytes 12,200, sedimentation rate 17 (Westergren); April 1946 (two weeks before hemorrhage) erythrocytes 5,300,000, hemoglobin 17 Gm., leukocytes 9,900, erythrocyte volume 50, sedimentation rate 12; in May 1946 (one day after hemorrhage) erythrocytes 3,200,000, hemoglobin 66 per cent, with no change after three weeks' hospitalization; in June 1946 erythrocytes 4,000,000, hemoglobin 77 per cent, sedimentation rate 25. (The last erythrocyte count and hemoglobin estimation were not influenced by three injections of liver extract.) The differential white blood count has always been normal. Poikilocytes and young cells have never been found in the smears. Does this patient have an organic gastrointestinal lesion plus pernicious anemia with posterolateral sclerosis as an independent disease? Can pernicious anemia be diagnosed with cord changes but without true anemia at any time over four years? Is liver indicated in this case? What further studies are indicated?

M.D., Colorado.

Answer.—Tarry stools and hematemesis followed by a definite drop in the red blood cell count and hemoglobin are strong evidence in favor of an organic gastrointestinal lesion, most likely in the esophagus, stomach or duodenum. It is not always easy to demonstrate roentgenologically the source of a hemorrhage from the upper gastrointestinal tract such as this patient presumably had. In such cases repeated roentgenologic examinations are definitely indicated in search of a demonstrable lesion such as peptic ulcer in the stomach or duodenum, esophageal varices, gastric carcinoma or diaphragmatic hernia. At times the probable source of the hemorrhage can best be found gastroscopically as in some cases of hypertrophic gastritis or gastric polyp. Gastroscopy is, of course, contraindicated in the presence of esophageal varices.

The question of whether this patient has achlorhydria is important in relation to the various diagnostic possibilities. The presence of free acid would not support the diagnoses of pernicious anemia, typical subacute combined degeneration of the cord or a combination of the two. On the other hand, the persistent absence of free acid would not be compatible with a diagnosis of peptic ulcer. It should be noted, however, that the most reliable and potent method known of stimulating gastric secretion is by means of the subcutaneous injection of histamine. Unless the evidence of achlorhydria is based on several histamine gastric analyses and it is known that the tip of the tube is in the lower portion of the stomach during the gastric aspirations (this can be checked fluoroscopically), the results cannot be considered as proof of achlorhydria.

Subacute combined degeneration of the cord without the blood and bone marrow findings or pernicious anemia occurs and is a recognized clinical entity. The treatment frequently recommended is liver therapy employing dosages similar to those used in the treatment of pernicious anemia. Massive doses of liver have also been recommended. The value of liver therapy in subacute combined degeneration of the cord without anemia has, however, been questioned and there is evidence to indicate that it does not alter the course of the disease.

On the basis of the information given, it seems unlikely that the patient could have tabes dorsalis. It should be emphasized, however, that the serologic reactions and spinal fluid findings may both be normal at times in some cases of tabes and that in such cases the history, physical findings and the results of subsequent spinal fluid examinations may be of diagnostic significance. In the absence of Argyll-Robertson pupils or other suggestive pupillary changes such a diagnosis would hardly be tenable. But, in the presence of signs of posterolateral sclerosis and abnormal pupillary reflexes, tabes becomes a definite probability despite normal serologic and spinal fluid findings.

The neurologic findings, however, do not appear to offer a satisfactory explanation for the hematemesis, and further investigation into this phase of the problem seems indicated as outlined. With regard to the question of liver therapy, there seems to be no clearcut indication for its use in this case.

HEPATOMEGALY AND PORTAL OBSTRUCTION IN DIABETIC CHILD

To the Editor:—A girl aged 6½ years, diabetic for eighteen months, during the last four months has developed dilated veins over the feet, thighs and abdomen, more severe on the right side. The liver is palpable two fingerbreadths below the costal margin and is slightly tender. The stools are of large diameter but otherwise normal in appearance and frequency. Hemoglobin, erythrocytes, leukocytes and the differential leukocyte count are normal. The child has gained 3 pounds (1,360 Gm.) and grown 1 inch (2.5 cm.) in the last six months. No jaundice, ascites, edema or digestive disturbances have been noted. She is apparently happy and normally energetic. The diabetes is controlled by a diet of carbohydrate 150, protein 70, fat 75 and insulin regular 12 units and protamine zinc 6 units before breakfast. The diet is supplemented by 500 mg. of methionine and 200 mg. of choline daily. What diagnostic and/or therapeutic procedures are suggested?

M.D., Wisconsin.

Answer.—The child referred to in this query presents a diagnostic problem in relation to the enlarged tender liver and the dilated veins over the feet, thighs and abdomen, more severe on the right side. Occasionally in diabetes a rise in blood lipids may occur accompanied with hepatomegaly and sometimes splenomegaly. When the enlarged liver of such patients has been examined it has been found to contain excess fat. It might be of interest in this case to examine the blood lipid content. In the absence of jaundice other possible causes of liver enlargement such as abscess, cyst and neoplasm should be considered, as well as leukemia, amyloidosis and the lipid storage diseases. However, in the presence of a frank diabetes it can be assumed that these other conditions for hepatic enlargements have been ruled out. Whatever condition is causing the liver hypertrophy may also be causing a portal obstruction, which would be evidenced by the venous dilatation as described. In all probability, therefore, diagnostic procedures should be focused on establishing a fatty liver as the cause of the liver enlargement and the venous dilatation through portal obstruction.

In the absence of "lipotropic" factors, fat tends to accumulate in the liver. Choline is an important lipotropic factor and is chiefly supplied from the pancreas. Another factor recently described by Dragstedt under the term "lipocaic" is furnished by the pancreas. Methionine, an amino acid containing sulfur, is also said to have lipotropic action.

Therapeutically it might be wise to decrease the fat intake and increase the protein and carbohydrate and insulin dosage for a period in an attempt to decrease the size of the liver and relieve the venous dilatation. Dosage of choline could also be gradually increased on the theory that the pancreas is unable to furnish the required amount for preventing fatty infiltration. The dose of choline could be gradually increased to as much as 2 Gm. daily. As the liver is the storehouse for certain of the vitamins, an ample supply of the multivitamin preparations seems indicated.

GENERALIZED VISCEROPTOSIS

To the Editor:—Please discuss the treatment of generalized visceroptosis in a woman aged 30.

Louis Goldberg, M.D., Bronx, N. Y.

Answer.—The clinical significance of visceroptosis, whether general or more localized in nature, such as so-called right-sided or midline ptosis, is a controversial matter. As the result of authentic clinical observations and anatomic research in the last few decades, leaders in the medical profession have become more and more skeptical and even entertain serious doubts as to whether such a diagnosis as enteroptosis, gastroptosis or coloptosis is warranted. For a more detailed discussion of the subject in this respect consult Nelson's New Loose-Leaf Medicine **5**:329, 1942. To those who entertain an opposite point of view, information concerning corrective exercises and treatment of this condition will be found in the articles by Martin (*Surg., Gynec. & Obst.* **15**:150 [Aug.] 1912), Anderson (*M. Times* **65**:247 1937) and Spiesman (*Rev. Gastroenterol.* **7**:218 [May-June] 1940).

TESTS FOR BARBITURATES AND EFFECTS OF PROLONGED USE

To the Editor:—1. What tests can be made to determine the presence of barbituric acid or barbituric acid products in the blood? 2. Has the prolonged use of luminal or phenobarbital or barbituric acid any effect on sexual function in men?

M.D., Massachusetts.

Answer.—1. The following method is satisfactory for estimating barbiturates in blood and also in urine. The compounds are extracted with chloroform, and cobalt acetate and isopropylamine are added. The reddish color is compared with a standard solution of barbiturates. All solutions for this test must be kept water free. Method: 1 to 2 cc. of blood (or acidulated urine) is pipetted into a small mortar containing sufficient plaster of paris to form a dry mixture. Powder and transfer to a paper extraction shell. Insert into a perforated glass tube connected to a Soxhlet reflux condenser. Add 10 volumes of chloroform to the extraction flask and heat to boiling for half an hour on a water bath. Filter the chloroform extract and test. If the test is negative, concentrate the extract on a water bath and retest. To 1 cc. of the chloroform extract add 0.05 cc. of cobalt acetate solution (1 per cent in absolute methyl alcohol) and 0.3 cc. of isopropylamine solution (5 per cent in absolute methyl alcohol). Compare with standard barbiturate solution containing 0.25 mg. in 1 cc. and treated with 0.05 cc. of the cobalt acetate solution and 0.03 cc. of the isopropylamine solution.

2. The barbiturates are central depressants, and any central depressant such as alcohol, volatile anesthetics, morphine and barbiturates will depress sexual performance while the patient is under their influence. There is no evidence that continued use of the barbiturates will permanently impair sexual function, but it must be remembered that the conditions for which the barbiturates are used may in themselves affect both sexual desire and sexual performance.

VESICAL AND PROSTATIC CARCINOMA

To the Editor:—A man aged 55 has been treated for four years for carcinoma of the prostate. He has had diethylstilbesterol, a bilateral orchiectomy and a prostatic resection. A biopsy at the time of resection confirmed the diagnosis of carcinoma of the prostate. Subsequently the patient had a severe episode of hematuria resulting in a bladder full of blood clots. A suprapubic operation was performed. On removal of the clots neoplastic involvement of the trigone and ureteral orifices as well as the adjacent bladder wall was observed. A biopsy was taken and reported as carcinoma of the bladder. The surgeon doubted the diagnosis of carcinoma of the bladder and thought that the malignant condition was a direct extension from the prostate. It is my understanding that invasion of the bladder wall by carcinoma of the prostate is uncommon. Please discuss this condition and its relative frequency.

Ralph U. Whipple, M.D., Rockville Centre, N. Y.

Answer.—Carcinoma of the prostate occurs in 14 to 25 per cent of men over 50. One half of the cases originate with hypertrophy, and the remainder seem to originate in the posterior lobe independent of hypertrophy or infection. The spread of carcinoma from the prostate is local and/or distant. The distant metastases frequently occur along the vertebral system of veins.

When carcinoma begins in the lateral lobes the spread may occur along the perineural lymphatics and early invade the capsule. In 75 per cent of the cases there have occurred invasion and extension beyond the capsule when the patients first seek medical advice. Local spread may follow the ejaculatory ducts and appear between the seminal vesicles, where it can be palpated in the prostatic notch by rectum. The adjacent bladder wall and surrounding structures are involved early as a result of the contiguity of tissues. However, the bladder wall may remain free until comparatively late in the disease. Bladder invasion can best be determined by cystography and cystoscopy. Ulcerated masses observed near the neck may be indistinguishable from bladder carcinoma except by microscopic sections.

It is sometimes impossible to say whether or not there is a prostatic cancer invading the bladder or a bladder cancer invading the prostate. Cancer of the bladder neck usually invades the prostate early. Cases of this type are far advanced and probably hopeless for cure. Biopsy and microscopic sections are the best aid in the differential diagnosis, provided the metastatic tumors retain their original architecture.

In the case described in the query, if the original biopsy was adenocarcinoma of the prostate the bladder growth might have been a new vesical tumor. However, invasion of the bladder from prostatic carcinoma is not uncommon and is the rule in advanced cases.

ELECTRIC SHOCK AND FETAL DEATH

To the Editor:—What is the amount of electrical shock necessary to cause the death of a six month fetus?

Irvin B. Gardner, M.D., Houston, Texas.

ANSWER.—Reliable information is not available as to the precise amount of electrical shock necessary to cause death of a 6 months fetus.

On theoretical grounds there would appear to be two principal mechanisms by which an appropriate electrical shock might cause death of a fetus: The myometrium might be stimulated to such violent contraction as to cause the uterus to expel its contents or fatal asystole or fibrillation of the fetal heart might be produced.

By either mechanism it would be essential that the electrical contacts were such that the current would pass through the uterus. There are two sources of collateral information from which it can be inferred that fetal death would not be likely to result from either mechanism except by the action of a relatively strong current. One is that uterine muscle is known to lose much of its responsiveness to stimulation during pregnancy. Many stimulants capable of causing contraction of a nongravid uterus become partially or completely ineffective during pregnancy. It is probably also true that the fetal heart is less susceptible to severe disturbance by electrical shock than is the heart of an adult.

Thus, although there is no direct information as to the amount of current required to kill a fetus it can be inferred that in order to attribute fetal death to an electrical shock it should be known (1) that the uterus lay in the pathway of the current and (2) that the current was sufficiently strong to elicit a violent physiologic response in other parts of the maternal organism.

NEGROID CHARACTERISTICS IN INFANT

To the Editor:—An army captain and his wife have started adoption proceedings on a 3 months old infant who is the child of a white woman. The mother will not identify the child's father. The infant now presents a uniform brownish discoloration proximal to the finger nails which is consistent with that seen in an infant of part Negro blood. Otherwise the infant exhibits no unusual characteristics. Can further negroid characteristics be expected to develop in the first twelve months? Is the foregoing sufficient evidence to indicate Negro blood? No history of contact with or injection of heavy metals is available.

Captain, M. C., U. S. Army.

ANSWER.—Discoloration proximal to the finger nails is suggestive of negroid ancestry but in and of itself is not conclusive evidence. When it appears as a result of Negro admixture it generally is accompanied by other suggestive characteristics. The probability that other negroid characteristics will also be present in a child of negroid ancestry is fairly high. A child 3 months old does change considerably within a year and by then could give further evidence of racial admixture. Changes could occur, in particular in mouth, lip, hair and eye features.

ANTAGONISM OF BARBITURATES AND AMPHETAMINE SULFATE

To the Editor:—Is it rational to prescribe together barbiturates and amphetamine sulfate? Would the barbiturate reduce the excitement often caused by amphetamine in depressed patients in the menopause?

M.D., Ohio.

ANSWER.—Amphetamine sulfate and the barbiturates are physiologic antagonists, and the prescribing of the two together is irrational. In depressed states the dosage of amphetamine should be reduced to the minimum necessary to overcome the depression without producing excitement, nervousness or undue wakefulness. Occasionally a barbiturate may be necessary to overcome the effects of slight overdosage of amphetamine, thus permitting the patient to obtain a night's sleep. The barbiturate should be used only when indicated and not prescribed routinely or to be taken at the same time as the amphetamine.

CLOSURE OF PERFORATION OF EAR DRUM

To the Editor:—Is there any method by which an ear drum that has been perforated for two years may be closed? The perforation is marginal and occupies about one half the surface of the drum.

M.D., Pennsylvania.

ANSWER.—There is no method by which a marginal perforation can be closed, since in this type of perforation the epithelium of the canal wall has grown through the marginal gap into the middle ear, leaving no free border to the drum membrane. Central perforations of the drum membrane may sometimes be closed by a technic described by Dr. Ellis Linn of Des Moines, Iowa.

MUSCULAR CRAMPS AND PAIN IN EXTREMITIES IN PARKINSONISM

To the Editor:—A man aged 42 had a severe attack of encephalitis in 1941. At the present time his main complaints are extreme fatigue, headache, insomnia and severe muscular cramps in the feet and legs associated with almost constant severe pain in the lower extremities. Pulsation at the ankles appears to be normal. The patellar reflexes are absent. There are some numbness and loss of sensation below the knees. There is extreme weakness. The appetite is usually good, with some weight gain recently. The mentality is normal. Very few Parkinson symptoms are present. Belladonna used as Bella Bulgara and Rabellon was administered for a long time but has now been discontinued without any apparent changes in symptoms. General complaints narrow down to insomnia. Please discuss treatment.

M.D., Florida.

ANSWER.—From the symptoms described in the query it is suggested that a spinal fluid examination be made. The findings suggest peripheral neuritis or some spinal cord disease. The spinal fluid should be examined for cells, globulin, quantitative total protein, Lange colloidal gold curve and Kahn reactions. If these findings are normal it is suggested that intramuscular injections of liver extract be given two times each week for ten weeks, hypodermic injections of thiamine hydrochloride 150 mg. two times a week for ten weeks and a diet rich in vitamin B.

TRAUMA AND THROMBOPHLEBITIS

To the Editor:—A woman aged 51, with varicose veins of both lower extremities and the abdominal wall, developed thrombophlebitis of several vessels in both upper quadrants of the abdomen just below the costal margins. This followed several weeks' work on a punch press and bench work during which intermittent pressure was exerted on her abdomen but not sufficient to be termed an acute trauma and not severe enough to make her aware of direct trauma. Is this abdominal pressure the cause of the thrombophlebitis?

Emil Franklin, M.D., Milwaukee.

ANSWER.—From the description it would appear that the patient has had an old deep venous thrombosis with obstruction of both iliac veins, since this type of occlusion gives a pattern of collateral veins described in the inquiry. It is known that such collateral veins may thrombose quite readily and that trauma, muscular exercise or infection may precipitate it.

For a discussion of the relationship of trauma and thrombophlebitis one may consult Trauma and Disease, by Brahdy and Kahn (Philadelphia, Lee & Febiger, 1941).

INHERITANCE OF MYOPIA

To the Editor:—What is the possibility of weak eyes in offspring from parents who are both nearsighted, acquired after measles or otherwise? The prospective grandparents have normal eyes, but among the great grandparents there are some nearsighted individuals.

Matt Elsen, M.D., Winnebago, Ill.

ANSWER.—A character acquired as the result of environmental factors has never been known to affect the hereditary materials of reproductive cells in such a way that offspring will have a greater tendency to show the character in question. Accordingly it is the opinion of human geneticists that if the nearsightedness of offspring has been induced by measles or other environmental factors the offspring will have no greater tendency to be nearsighted than would have been true if their parents had not had measles. However, it seems probable that a person who develops nearsightedness due to measles or any other environmental factor has some hereditary disposition in that direction. If this is true, the children might develop nearsightedness under similar circumstances.

There is no question that many cases of nearsightedness are due to hereditary factors. The mode of inheritance apparently differs in different families, but many familial cases seem to follow a simple autosomal dominant mode. For the family referred to in the inquiry it would be impossible to predict results among future offspring.

EXPERIMENTAL PRODUCTION OF MIGRAINE

To the Editor:—In an answer to a question with reference to experimental production of migraine headache, the statement is made (Queries and Minor Notes, The Journal, Oct. 26, 1946, p. 486) that "there is no satisfactory method of experimentally inducing attacks of migraine in persons who are susceptible to them." I would call attention to the observations of Muck (*Münchener med. Wchnschr.* **73**:982, 1926; *Klin. Wchnschr.* **6**:693, 1927), according to which in patients suffering from migraine hyperventilation causes attacks with regularity. I described the probable mechanism of this effect of hyperventilation in migraine in several publications (for example, A New Approach to Dietetic Therapy, Boston, R. G. Badger, 1933, p. 92; A New Aspect of Migraine, *Am. J. Digest. Dis. & Nutrition* **1**:359 [Aug.] 1934). In these contributions I also referred to observations which seem to show that attacks of migraine can be induced in predisposed persons by a diet rich in carbohydrates and liquids.

Eugene Foldes, M.D., New York.

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 133, No. 5 CHICAGO, ILLINOIS FEBRUARY 1, 1947

Copyright, 1947, by American Medical Association

EPIDEMIC ENCEPHALITIS IN MILITARY PERSONNEL

Isolation of Japanese B Virus on Okinawa in 1945, Serologic Diagnosis, Clinical Manifestations, Epidemiologic Aspects and Use of Mouse Brain Vaccine

ALBERT B. SABIN, M.D.
Cincinnati

A disease clinically similar to the Japanese B type of epidemic encephalitis was known to occur during the late summer months on Okinawa, predominantly among children.[1] However, it was not established that the Japanese B virus was the etiologic agent. On July 8, 1945 several cases of encephalitis were recognized in the native population on Heanza Shima, a small island 2 miles east of Okinawa, by Lieut. L. M. Miller, and on July 10, 1945 Lieut. Comdr. (later Comdr.) Leon Lewis (MC), U.S.N.R., of the Military Government discovered 4 patients with encephalitis in a large civilian hospital on Okinawa.[2] By the end of July, with the aid of the complement fixation test developed by Casals and Palacios[3] a diagnosis of epidemic encephalitis due to virus infection of the Japanese B type was made in several of these early cases by members of the Naval Medical Research Unit 2 who were first on the scene for the investigation of this outbreak.[4] According to Lieut. Comdr. W. Kees (MC), U.S.N.R., who studied the outbreak on the adjacent islands of Heanza and Hamahika, there were 31 cases with onset between July 1 and July 25, 1945 among a native population of 6,547 (an incidence of 4.7 per 1,000) on Heanza and 5 cases on Hamahika during the same period among a population of 1,500 (an incidence of 3.3 per 1,000). This was the total extent of the epidemic on these islands with a case fatality rate of 30.6 per cent. The epidemic on the island of Okinawa continued through August and the early part of September; while 91 cases of encephalitis were found,[2] it was the opinion of Lieut. W. E. Mosher (MC), U.S.N.R., the epidemiologist for the Military Government, that this number may have represented only 15 to 30 per cent of the total, because special conditions precluded discovery of all the cases. Over 80 per cent of the cases were in children 15 years of age or younger, and the case fatality rate was 28.6 per cent.[2]

During the months of July, August and September, 1945, some form of virus infection of the nervous system was suspected in 38 members of the American Military forces. Only 12 of these exhibited severe or moderately severe signs and symptoms of encephalitis and 2 died—1 on August 7 and the other August 17. Most of the others had relatively mild illnesses with transitory nuchal rigidity and reflex changes which, with a few exceptions, were associated with pleocytosis.

ISOLATION OF THE VIRUS

The etiology of the outbreak was established by complement fixation and neutralization tests on the serums of patients in suspected cases and by the isolation of a single strain of virus from a fatal native case.[5] In the first fatal military case, which terminated on the tenth day of illness and exhibited widespread lesions in the brain and cord,[6] a vigorous attempt was made to isolate the virus from the brain and cord. Many mice were inoculated both on Okinawa and in the United States with samples of gray matter taken from both sides of the frontal, parietal and occipital areas of the neopallial cortex, from the cerebellar cortex and from the midbrain, pons, medulla and upper cervical cord, but despite the fact that multiple lesions were present in all these areas, virus was not isolated. The serum of this patient obtained about two days before death had a neutralization index of 32 in the intracerebral test and of 10,000 in the intraperitoneal test against the Japanese B type of encephalitis virus isolated from the civilian patient on Okinawa.[6a] In the second fatal military case, which terminated on the seventh day of illness, the

---

From the Children's Hospital Research Foundation, Department of Pediatrics, University of Cincinnati College of Medicine

The work in Okinawa, Japan, and subsequently in the United States of America was performed while Dr Sabin served as a Lieutenant Colonel, Medical Corps, with the Army Epidemiological Board, Preventive Medicine Service, Office of the Surgeon General, United States Army. The investigation was sponsored by the Commission on Neurotropic Virus Diseases, Army Epidemiological Board. Drs. W. McD. Hammon and W. C. Reeves, who came to Okinawa at the end of August 1945, continued with investigations of the outbreak after my departure, and I am greatly indebted to them for many observations.

I wish to express my indebtedness and thanks to Brig Gen. S. Bayne Jones, Deputy Chief, Preventive Medicine Service, Office of the Surgeon General, for this interesting assignment and for all the arrangements which made it possible to carry out this work and to Col. James B Stapleton, Col. Walter B Martin, Major W. G. Downs, Major W. L Forman, Major A S. Benenson and Major (later Lieut Col) Harvey G. Taylor of the Medical Corps, and Capt Carl T. Parsons of the Sanitary Corps, Army of the United States, as well as to Lieut. Comdr. W. Kees, Lieut. Comdr (later Comdr.) Leon Lewis and Lieut Wm. E Mosher of the Medical Corps, United States Naval Reserves, for their help during the course of the work on Okinawa

In the preparation of this paper the attempt has not been made to review the voluminous Japanese literature on Japanese B encephalitis, or to compare the findings herein reported with those claimed by Japanese scientists Most of the work on encephalitis in Japan has been published in the Japanese language, which is a distinct barrier, and furthermore, since 1941 their medical journals have had scant international circulation. For these reasons the bulk of their recent work on this disease has been unavailable for review at the time of writing this paper

[1] Iimura, Y : An Epidemiological Observation of Encephalitis Lethargica in Japan, J. Pub. Health A. Japan **12**: 1-47, 1936.

[2] Lewis, L ; Taylor, H. G ; Sorem, M. B.; Norcross, J. W., and Kindsvatter, V. H.: Japanese B Encephalitis: Clinical Observations in an Outbreak on Okinawa Shima, to be published.

[3] Casals, J., and Palacios, R.: The Complement Fixation Test in the Diagnosis of Virus Infections of the Central Nervous System, J. Exper. Med. **74**: 409-426, 1941.

[4] Hodes, H. L ; Thomas, L , and Peck, J. L.: Cause of an Outbreak of Encephalitis Established by Means of Complement Fixation Tests, Proc. Soc. Exper. Biol. & Med **60**: 220 225, 1945

[5] Sabin, A B : Outbreak of Encephalitis on Okinawa in 1945—Preliminary Report on Status as of 27 August 1945, J. Mil. Med. Pacific **1**: 79-84, 1945. Hodes, Thomas and Peck.[4]

[6] Haymaker, W., and Sabin, A. B.: The Topography of Lesions in the Central Nervous System in a Case of Japanese B Encephalitis on Okinawa, Arch. Neurol. & Psychiat., to be published.

[6a] It is believed that the presence of antibodies in the serum of this patient was probably not responsible for the failure to isolate the virus, because during the summer of 1946 R. W. Schlesinger and I isolated Japanese B encephalitis virus from the brain of a soldier who died in Korea on the fifth day of illness, and tests carried out by Capt. David Ginder, M.C., on the serum taken twelve hours before death revealed an intracerebral neutralization index of 10,000 (unpublished data).

brain of the patient was removed by another pathologist and delivered in solution of formaldehyde, precluding any virus studies. The brain was turned over to Lieut. Comdr. (later Comdr.) H. M. Zimmerman [7] of the Naval Medical Research Unit 2. He found widespread pathologic changes compatible with a diagnosis of encephalitis. The serum of this patient taken the day before death failed to neutralize the virus by the intracerebral route (neutralization index of 1) but exhibited definite, though irregular, neutralization by the intraperitoneal route.

Isolation of virus was attempted from the brain tissue of patients in 3 fatal native cases, with only 1 successful result.[7a] The patient from whose brain virus was isolated was a 13 year old girl who died on the fifth day of illness. The necropsy was not performed until ten hours after death, but specimens of tissue taken from the same areas of the brain and cord as those listed previously were immediately used for mouse inoculation. Portions of each piece used for preparation of this suspension were also sent in 50 per cent buffered glycerin [7b] and 50 per cent isotonic solution of sodium chloride to the laboratory of the Naval Medical Research Unit 2 in Guam, but no virus was obtained from the glycerinated material. The mice used for isolation of virus were brought from the United States and kept in screened cans. All 5 mice inoculated with the freshly prepared suspension of material from the human brain and cord exhibited signs of involvement of the central nervous system six or seven days after inoculation (table 1), and on passage of the mouse brain suspension the incubation period was reduced to four days. The bacteria-free agent thus transmitted in series was identified immunologically as a strain of the Japanese B encephalitis virus by both neutralization (table 2) and complement fixation (table 3) tests.[8] The slight cross reaction of the Okinawa virus antigen with St. Louis encephalitis immune serum is in keeping with the known existence of a slight antigenic relationship between the Japanese B, St. Louis and West Nile viruses.[9] Immune serum against the virus of Russian spring-summer tick-borne encephalitis failed to neutralize even the smallest amounts of the Okinawa virus. The Okinawan strain of virus after only a few mouse brain passages proved to have the same degree of pathogenicity for mice (table 4) as the well established Nakayama strain of Japanese B virus after hundreds of mouse passages. While the Okinawa virus does not give rise to clinical signs of infection in intracerebrally inoculated rabbits and guinea pigs (aside from a possible transitory febrile reaction), it produces an antibody response in these animals suggestive of an inapparent infection.

TABLE 1.—*Isolation of Virus from Brain and Cord of Fatal Civilian Case and Passage in Mice*

Passage	Inoculum	Result of Mouse Inoculation *
I	Human brain and cord, 20 per cent suspension; 0.03 cc. intracerebrally, 1 cc. intraperitoneally	6, 6, 7, 7, 7
II	10 per cent mouse brain suspension; 0.03 cc. intracerebrally, 1 cc. intraperitoneally	4, 4, 4, 4, 4
III	1 per cent mouse brain; 0.03 cc. intracerebrally	4, 4, 4, 4

* Numbers in this column refer to days after inoculation when each mouse first exhibited signs of involvement of the central nervous system.

Test for Virus in Lung Tissue.—The patient from whose brain this virus was isolated also exhibited a bronchopneumonia post mortem, a complication not infrequently seen in fatal cases. Several pieces of affected lung tissue obtained from this patient at necropsy and preserved in 50 per cent buffered glycerin and 50 per cent isotonic solution of sodium chloride in the cold were tested for virus by mouse inoculation, but none was isolated.

Tests for Virus in Cerebrospinal Fluid and Blood.—Cerebrospinal fluid was obtained about twelve hours before death from the civilian patient whose brain yielded virus, and was immediately inoculated into 5 mice. Three of the mice remained well; 2 died on the twentieth and twenty-first days after inoculation. Passage of the brain of one of these mice did not yield any virus. In addition to this case, cerebrospinal fluid, obtained from 4 military patients (2 on the fourth day, 1 on the fifth day and 1 on the eighth day of illness, just two days before death) was tested for virus with negative results; the diagnosis of encephalitis due to Japanese B virus was established in these instances by serologic tests. The cerebrospinal fluid obtained from 2 military patients, in whom the diagnosis was not confirmed by serologic tests, on the third and fourth days of illness also failed to yield any virus. The patients' blood was tested in 2 proved military cases on the third and fourth days of illness and in 2 civilian cases on the second day of illness with negative results.

SEROLOGIC DIAGNOSIS IN MILITARY CASES WITH SUSPECTED VIRUS INFECTION OF THE CENTRAL NERVOUS SYSTEM

The ideal goal in establishing by serologic methods that a given infection of the nervous system is caused by a specific virus has been to have a serum taken early enough in the disease to be without any antibodies for the virus and another serum taken at a later stage when such antibodies can be demonstrated unequivocally. At the time of this outbreak there was little or no information on the extent to which this goal may be achieved in patients with Japanese B type of encephalitis. Specimens of serum were obtained from all military patients as soon after onset as they were seen and at subsequent intervals whenever possible. The serums were stored in an ordinary refrigerator for periods of from one to three weeks before they were lyophilized from the frozen state in the laboratories of Naval Medical Research Unit 2 in Guam through the kind cooperation of Capt. (later Commodore) T. M. Rivers (MC), U.S.N.R., and Lieut. H. L. Hodes (MC), U.S.N.R. The lyophilized serums were transported to the United States in the cold and subsequently stored in an ordinary refrigerator until they were tested for both neutralizing and complement fixing antibodies.

An attempt to do complement fixation tests on Okinawa with lyophilized Japanese B virus antigen kindly supplied by Dr. J. Casals of the Rockefeller Institute was unsuccessful because the antigen was anticomplementary in the overnight refrigerator incubation, although it was not anticomplementary after the preliminary incubation in the water bath at 37 C. It was subsequently found that the anticomplementary factor in such reconstituted lyophilized antigens can be removed by angle centrifugation at 3,500 to 5,000 revolutions per minute for one hour. The final results shown in tables 6 and 7, however, were those obtained with freshly prepared mouse brain antigen from the Okinawa strain of virus, because a comparative test showed such an antigen to be more sensitive (table 5). Incidentally, using the Swedish angle centrifuge, the antigen had to be centrifuged at about 3,500 revolutions per minute for at least three hours after repeated freezing and thawing before it was satisfactory for use. The final criterion for a good antigen was that in its presence the complement had to yield the same titer after storage in the refrigerator for eighteen hours as after incubation at 37 C. for one half hour in a water bath and, in each instance, a higher titer than in the control tubes containing isotonic solution of sodium chloride.[9a] The Japanese B and St. Louis types of encephalitis antigens and the western type of equine encephalomyelitis antigen were used undiluted, and repeated titrations indicated that 8 to 16 units of antigen were contained in this dose. The results of each test were checked with either mouse or human immune serum of known titer. The serums were heated at 60 C. for twenty minutes. The neutralization tests were carried out by the intracerebral route with the use of a constant amount of serum against varying amounts of the Okinawa strain of virus, incubating the mixtures at 37 C. for two hours.

---

[7] Zimmerman, H. M.: The Pathology of Japanese B Encephalitis, Am. J. Path., to be published.

[7a] This work was done in association with Lieut. Comdr. L. Thomas and Lieut. J. L. Peck of the Naval Medical Research Unit 2.

[7b] The glycerin was buffered at pH 7.6 with phosphate buffer.

[8] The identity of this same strain of virus subsequently was also confirmed in the laboratories of Naval Medical Research Unit 2 by a complement fixation test.[4]

[9] Casals, J.: Immunological Relationships Among Central Nervous System Viruses, J. Exper. Med. **79:** 341-359, 1944.

The 10 patients with positive serologic tests for Japanese B encephalitis virus and the 2 patients who died are listed in order according to the date of onset in table 6, and the 12 patients in whom the results were entirely negative are similarly listed in table 7. The data in table 6 on serial specimens of serum, available on all but the 2 fatal cases (2 and 8) and case 12, indicate a sufficient change in titer in either the complement-fixing antibody or the neutralizing antibody to permit a specific diagnosis of encephalitis due to Japanese B virus

TABLE 2—*Identification of Okinawa Virus as Japanese B by Intracerebral Neutralization Test with Known Rabbit Immune Serum (Nakayama Strain)*

Test No	Date	Okinawa Virus Passage No	Serum in Virus Mixtures	Final Dilution of Virus in Mixtures								LD50	Neutralization Index *
				10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}	10^{-7}	10^{-8}	10^{-9}		
1	Aug 14, 1945	II	Normal rabbit	4/4†	4/4	4/4	4/4	4/4	.	..	...	$10^{-6.5+}$	
			Japanese B immune	4/4	2/4	2/4	0/4	0/4	..	...	...	$10^{-3.5}$	1,000+
2	Nov. 17, 1945	VI	Normal rabbit	...	..	4/4	4/4	4/4	4/4	2/4	0/4	$10^{-8.0}$	
			Japanese B immune	4/4	4/4	3/4	1/4	0/4	0/4	...	..	$10^{-4.5}$	3,200

* Here and in table 8 the neutralization index = titer of virus in normal control serum divided by the titer of virus in test serum.
† Here and in table 8 the numerator = number of mice succumbed; denominator = number of mice inoculated.

TABLE 3.—*Identification of Okinawa Virus as Japanese B in Complement Fixation Test with Known Japanese B (Nakayama) and St. Louis Encephalitis (SLE) Virus Mouse Immune Serums*

Antigen	Jap B Serum in Indicated Dilution *								SLE Serum in Indicated Dilution							
	1:4	1:8	1:16	1:32	1:64	1:128	1:256	1:512	1:4	1:8	1:16	1:32	1:64	1:128	1:256	1:512
Okinawa virus	4†	4	4	4	4	4	4	2	4	±	0	0	..	..	..	..
SLE virus	2	1	1	0	.	..	..	.	4	4	4	4	3	2	1	±

* In this table and in tables 5, 9 and 11 the dilutions of serums indicated are those originally added to the system. The final dilutions, which others[4] prefer to indicate, would be four times greater than those indicated in this table.
† In this table and in tables 5, 9 and 11 the numerals indicate the extent of fixation, 4 representing complete fixation and 0, complete hemolysis, or no fixation

TABLE 4.—*Infectivity of Okinawa Virus by Different Routes in Mice*

Passage No	Route and Dose	Approximate Age or Weight of Mice Used	Dilutions of Virus									LD50 Titer
			10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}	10^{-7}	10^{-8}	10^{-9}	
V	Intracerebral (0 03 cc)	3 wks	7/7*		.	. .	5/5	5/5	4/4	5/5	2/4	$10^{-9.0+?}$
VI	Intracerebral (0 03 cc)	3 wks			.		.	5/5	3/3	3/5	4/5	$10^{-9.1+?}$
	Intraperitoneal (0 3 cc)	20 Gm. (8 wks.?)	5/5	3/5	3/5	0/5	0/5	...		...	...	$10^{-2.8}$
	Subcutaneous (0.3 cc.)	20 Gm. (8 wks.?)	2/5	0/5	0/5	1/5	1/5	.	.	...	...	$10^{-1.2}$

* Numerator = number of mice succumbed; denominator = number of mice inoculated

TABLE 5.—*Comparative Sensitivity of Freshly Prepared (Okinawa Strain) and Lyophilized Japanese B Mouse Brain Antigen (Casals) for Complement Fixation Test*

Serum	Okinawa Virus Fresh Antigen (16 Units)								Lyophilized Antigen (8 Units)								Controls	
	Original Dilution of Serum								Original Dilution of Serum								WEE * + Serum 1:2	Saline + Serum 1:2
	1:2	1:4	1:8	1:16	1:32	1:64	1:128	1:256	1:2	1:4	1:8	1:16	1:32	1:64	1:128	1:256		
Mouse hyperimmune				4	4	4	4	2	.		.	4	4	4	4	±	0	0
Patient Wal																		
5 days	3	2	2	±	..	..	..	..	0	0	0	0	..	..	..	..	0	0
11 days....	4	4	3	2		..	..	..	3	2	1	0		..	..	..	0	0
18 days...	4	4	4	3		.	..	..	4	4	2	0		..	.	..	±	0
Patient Glb.																		
7 days..	1	3	1	±	.	..	..	..	4	4	±	0		.	..	..	±	±
14 days	4	4	3	2		.		..	4	4	3	±		..	..	..	0	0

* Western type equine encephalomyelitis † Days after onset See explanatory footnotes (* and †) in table 3.

[9a] During the summer of 1946 the complement fixation test was used extensively in the Tokyo laboratory of the Commission on Virus and Rickettsial Diseases I found that the second requirement in my criteria for a good antigen, namely, that the complement titer in the presence of antigen be higher than in the control tubes containing isotonic solution of sodium chloride, was frequently unobtainable, and yet such antigen could be used satisfactorily.

infection. The data in table 6 furthermore illustrate the following important points:

1. The neutralizing antibody, as determined by the intracerebral test, was equivocally or distinctly positive as early as three to four days after onset (i. e., fourth or fifth day of disease), indicating how difficult it is, by the use of this test, to achieve the desired goal of having an early specimen without antibody followed by a later one in which antibody is definitely present as long as five weeks may be required before the antibody either appears or increases to satisfactory titer (see especially cases 3 and 4).

5. Early in the course of the disease (for as long as three weeks in case 3) the patient's serum may have neutralizing antibody but no complement-fixing antibody (cases 2, 3, 4 and 5). In 1 patient (case 10) only was the reverse true—the serum obtained two days after onset had no neutralizing antibody but fixed complement in a dilution of 1:4, specifically with the Japanese B antigen

TABLE 6—*Military Patients with Positive Serologic Tests for Japanese B Encephalitis Virus*

Patient		Date of Onset, 1945	Days After Onset Serum Obtained	Intracerebral Neutralization Index Jap B	Complement Fixation			Chief Clinical Manifestations
No.	Name				Jap B	SLF	WEE	
1	Huf.	July 18	5		(1:2)*			8 day fever, confused and restless, slurred speech, tremors, decided nuchal rigidity, hyperreflexia, WBC 8,750, CSF 104, 61 cells
			17	100, 50	1:16; (1:32)*	0	0	
			48	80	1:32	1:4	0	
2	Tru	July 28	7	32 [10,000 in intraperitoneal test]	0	..	0	Fever, lethargy to coma, generalized rigidity, convulsions; WBC 10,650; CSF 192 cells Died tenth day encephalitic lesions found
3	Poo	July 31	4	63	0	..	0	8 day fever, vomiting; drowsy, nuchal rigidity, hyperactive deep reflexes, tremors, WBC 27,650; CSF 60, 463, 43 cells
			15	63	0		0	
			21	500+	0	0	0	
			35	. .	1:8; 1:16	0	0	
4	Row	Aug 1	3	40	0	0	0	7 day fever, drowsy, slurred speech, tremors, nuchal rigidity, reflex changes, WBC 18,150, CSF 66, 85, 15 cells
			14	20	1:4		0	
			21	63	1:4		0	
			34	2,000+	1:32	0	0	
5	Tha.	Aug 2	4	30	0		0	15 day fever, extreme lethargy, athetoid movements tremors, nuchal and spinal rigidity, bronchopneumonia; WBC 17,850, CSF 284, 70, 8 cells; residual masklike facies and personality change
			14	125	1:32	0	0	
			21	100	1:16		0	
6	Wal.	Aug 5	5	10, 40	1:8	0	0	11 day fever, lethargy, athetoid movements, nuchal rigidity; WBC 15,850, CSF 22, 112 cells
			11	20	1:16		0	
			18	300+	1:16	0	0	
7	Gib	Aug 8	7	13, 32	1:4	0	0	10 day fever, lethargic, confused tremors, poor coordination, nuchal rigidity WBC 14,200, CSF 508, 24 cells
			14	300+	1:16	0	0	
8	Rya	Aug 11	5	1 [Irregular, but definite neutralization in intraperitoneal test]	0	..	0	Fever, disorientation and confusion followed by coma, aphasia, spastic paralysis of right upper extremity with analgesia in lower ⅔ followed by generalized spasticity, dissociated eye movements, trismus, positive great toe reflexes and ankle clonus; WBC 14,650, CSF 130, 68 cells. Died sixth day; encephalitic lesions found
9	Tho	Aug 15	7	320+?	1:2	0	0	7 day fever, lethargy, coarse tremors, nuchal and spinal rigidity; WBC 14,100, CSF 41, 62 cells
			14	80	1:8		0	
10	Joh R	Aug 21	2	3	1:4	0	0	Fever, vomiting, drowsiness, tremors, nuchal and spinal rigidity; WBC 16,100; CSF 645 cells
			17	320		..	..	
			25	.	[1:64]†			
11	Vin	Aug 21	3	20	1:4	..	0	Fever, confused, lethargic, "petit mal convulsions, "does not speak or comprehend speech," trismus, nuchal rigidity; WBC 21,200, CSF 400 cells
			7		(1:32)*			
			25		(1:32)*			
12 ‡	Hut	Aug 27	18	100	1:16; (1:32)*	..	0	Fever, nuchal rigidity, drowsiness, bilateral horizontal nystagmus WBC 16 500 CSF 305 cells

These abbreviations, notes and footnotes (* and †) also apply to table 7

Abbreviations Jap B, Japanese encephalitis virus mouse brain antigen; SLF, St Louis encephalitis virus mouse brain antigen; WEE, Western equine encephalitis virus mouse brain antigen; WBC, leukocytes per cubic millimeter of blood, and CSF, cerebrospinal fluid cell count The numbers of cells refer only to white cells

Notes The complement fixation titers represent the original dilutions of serum which gave 2+ or better fixation. 0 means that the 1:2 dilution of serum gave no fixation

Where two titers separated by a semicolon are given, they represent the results of different tests Where two or more figures separated by commas are given for CSF they represent the cerebrospinal fluid cell counts at different times

* *The complement fixation titers in parenthesis were those obtained by the Naval Medical Research Unit 2 investigators,*[4] *and I am indebted to* Lieut John L Peck (MC) U S N R, for forwarding some of these data as well as the serum on patient 12 Although this last serum was sent in the lyophilized state, unrefrigerated, by regular air mail from Guam to Cincinnati, there was only a twofold difference in the complement fixation titers obtained in the two laboratories

† This serum was tested in Dr. W. McD Hammon's laboratory, and I am indebted to him for the result

‡ Patient 12 received two doses of mouse brain vaccine on Aug 11 and 14, 1945, which may be responsible for his serologic response rather than infection with Japanese B virus

2. An approxmately tenfold or greater increase in the intracerebral neutralization index was demonstrable in 5 of the cases (3, 4, 6, 7 and 10) with a sufficient number of convalescent specimens, but it should be noted that this increase may not occur until from three to five weeks after onset, and perhaps even later.

3. Complement-fixing antibody in low titer, i. e, 1:2 to 1:8 the original dilution of the serum, was also found as early as from two to seven days after onset in 6 of 9 patients.

4. An increase in complement-fixing antibody titer occurred in each of the 9 patients on whom serial specimens were available, but again it should be observed that

6. Cross reaction with the St. Louis encephalitis virus antigen in the complement fixation test was observed in only 1 patient (case 1) forty-eight days after onset when the serum had a titer of 1:32 with the Japanese B antigen and 1:4 with the St. Louis virus. Since an earlier serum (seventeen days after onset) from the same patient gave a negative reaction to the St. Louis antigen, it would appear that the low titer of the positive reaction occurring forty-eight days after onset represents a late response to the common antigen possessed by these two viruses[9]

7. It is noteworthy that all patients shown in table 6 had severe or moderately severe clinical manifestations of encephalitis, except case 12. The last mentioned patient was the only one in this group to receive Japanese B encephalitis mouse brain vaccine. He had the first dose on August 11 and the second dose on August 14, seventeen and fourteen days, respectively, before onset. In view of the good complement-fixing titer exhibited by this patient, it is probable that his clinical manifestations were caused by infection with Japanese B encephalitis virus, although this is not certain because only one specimen of serum taken seventeen days after onset was available for test.[9b]

TABLE 7.—*Military Patients with Negative Serologic Tests for Japanese B Encephalitis Virus*

Patient		Date of Onset, 1945	Days After Onset Serum Obtained	Intracerebral Neutralization Index Jap. B	Complement Fixation			Chief Clinical Manifestations
No	Name				Jap B	SLE	WEE	
1	Leh	July 3	32	—2	AC	AC	AC	Low grade febrile illness followed by limp of left leg and tenderness over sciatic nerve with absent left ankle jerk; WBC 10,600; CSF 22 cells; Pandy trace
2	Car	July 11	24	4	0	0	0	4 day low grade fever followed by severe pain over left sciatic nerve and loss of left ankle jerk; WBC 5,200; CSF 42 cells; Pandy +++
3	Jor.	July 16	25	2	0	0	0	Low grade recurrent fever with nuchal and spinal rigidity followed by paralysis of left leg, complete foot drop, and pain over course of left sciatic nerve; WBC 11,400; CSF 92 cells; Pandy negative
4	Cop.	July 16	27	1	AC	AC	AC	Signs and symptoms of "aseptic meningitis" only record
5	Mad.	July 21	16	3	0	0	0	Transitory convulsions and nuchal rigidity while under treatment for amebiasis; CSF 3 cells
			35	1	0	0	0	
6	Joh K	July 31	23	—3	0	0	0	Seen after 4 day fever, presenting decided emotional disturbance, confusion, masked facies, pronounced intention tremor, generalized muscular weakness, absent knee jerks and abdominal reflexes, positive left Oppenheim sign; no nuchal or spinal rigidity; WBC 4,900, CSF normal
7	Was	Aug 1	14	8	...	..	...	Onset with headache, diplopia and weakness after 3 days of nausea and vomiting; great nuchal and spinal rigidity, nystagmus, bilateral positive Oppenheim sign Fever observed on thirteenth day, no previous record; WBC 6,500; CSF 145 cells
			22	10 (?)	AC	AC	AC	
			28	1	0	0	0	
8	Har.	Aug 2	4	1	0	...	0	7 day fever with slight nuchal rigidity and reflex changes; WBC 11,300, CSF 19, 36 cells
			13	—3				
			23	—3	0	0	0	
9	Mue	Aug 2	2	3	...	...	...	4 day low grade fever with moderate nuchal rigidity and absent abdominal reflexes; WBC 8,250, CSF 91 cells, Pandy trace; 51 cells, Pandy +++; 5 cells, Pandy negative
			13	3				
			21	3				
			33	1	0	0	0	
10	Mos	Aug 10	6		0	0	0	Severe encephalitis with fever, mental confusion and lethargy followed by coma and convulsions, variable reflexes and positive great toe reflexes, nuchal rigidity; WBC 8,400; CSF 98 cells Afebrile eleventh day, but lethargy and mental confusion persisted; transferred to neuropsychiatric service because of persistent decided psychic disturbance
			14	1				
			25	1	(0)*, AC	AC	AC	
11	Moo.	Aug. 10	13	—3	.	...	...	Arrived at Okinawa from Luzon, P I., 2 days before onset. Mild illness with low grade fever, uncontrollable "jitteriness" and tremor, absent deep reflexes and suggestive "sciatic neuritis" CSF 3, 37, 12 cells with change from normal to increased protein (Pandy +++); WBC 12,450
			19	—2	[0]†			
			34	[neg]†	[0]†	[0]†		
12‡	Duk.	Aug 14	7	—3	1:8	1:4	1:2	2 days after first dose of mouse brain vaccine there developed low grade fever and malaise lasting 6 days. August 20 suggestive "meningismus" led to lumbar puncture with finding of 160 cells and Pandy +++; August 22, no neck or spine stiffness or pain and otherwise well, September 3, CSF 71 cells and Pandy tract; neurologic tests negative throughout
			15	—3				
			21	—1	0	1:2	0	

For key to abbreviations, notes and footnotes * and † see table 6
AC, anticomplementary
‡ The complement fixation results in patient 12 are perhaps best accounted for on the basis of the mouse brain vaccine he received.

TABLE 8—*Significance of a Low Intracerebral Neutralization Index Observed Early (Three Days) After Onset of Japanese B Encephalitis in Man in Terms of the Protective Capacity of the Serum by the Intraperitoneal Route*

Okinawa Strain of Japanese B Encephalitis

Type of Test	Approximate Age and Weight of Mice Used	Serum	Final Dilution of Virus in Mixtures							LD_{50} Titer	Neutralization Index
			10^{-3}	10^{-4}	10^{-5}	10^{-6}	10^{-7}	10^{-8}	10^{-9}		
Intracerebral (0 03 cc)	3 wks. (10 Gm)	Normal rabbit control	..	..	4/4	4/4	3/4	2/4	1/4	$10^{-8.0}$	..
		Patient Vin	...	.	4/4	4/4	1/4	0/4	...	$10^{-6.7}$	20
Intraperitoneal (0 1 cc)	2 wks. (6 to 7 Gm)	Normal rabbit control	4/4	4/4	3/4	3/3	3/4	3/4	.	$10^{-8.2+?}$	..
		Patient Vin	0/4	0/3	0/4	0/4	0/3		.	$10^{-2.5-?}$	500,000+?

Note: The intracerebral and intraperitoneal tests were carried out simultaneously, the same serum virus mixtures being used
See footnotes of table 2

A number of questions of practical importance are raised by the serologic observations shown in table 6. Since it has been customary to regard intracerebral neutralization indexes in the range of 10 to 49 (especially in work with the virus of the Western type of equine encephalomyelitis, which gives rise to high titers of antibody) as equivocal, it appeared desirable to determine by the intraperitoneal test the significance of intracerebral indexes of 20 to 40 against Japanese B encephalitis virus observed a few days after onset of clinical manifestations of the disease in man. The results of such a test on the serum obtained three days after onset, from a patient (11 in table 6) with severe encephalitis are shown in table 8 and indicate that the intracerebral neutralization index of 20 was equivalent to an intraperitoneal index of at least 500,000. This means that 0.05 cc. of this patient's serum on the fourth day of the disease was capable of neutralizing at least 500,000 mouse LD_{50} doses[10] of Japanese B encephalitis virus by a peripheral route. This would also suggest (*a*) that one is not likely to isolate Japanese B type of encephalitis virus from the blood of patients even a few days after onset and (*b*) that it is doubtful whether or not the circulating antibody titer can be raised sufficiently to make much difference by the amounts of hyperimmune serum that it may be practical to administer. In regard to the best type of test to use for diagnosis, the data in tables 6 and 7 indicate that there was not a single instance of discrepancy between the final results obtained in a given case by the neutralization and complement fixation tests. The complement fixation test carried out with suitably standardized antigens and with amounts of complement not in excess of 2 units (see table 9), as measured in the presence of the antigens used, is superior to the neutralization test for the practical purpose of determining the type of virus infection in a given case, not only because it is more rapid and does not require any animals but especially because it lends itself more readily to quantitative measurement of the antibody, which is absolutely necessary for the demonstration of a rising titer. Since the neutralizing antibody appears extremely early after onset in human beings, it is obvious that for diagnostic purposes this antibody must also be determined quantitatively. The intraperitoneal test, which is most sensitive, is not practical because mice older than fourteen to fifteen days cannot be used. The method of testing multiple dilutions of serum against a fixed amount of virus does not appear to me to be practical for the encephalitis viruses because unless exceedingly small amounts of virus are used (i. e., five to ten LD_{50} doses) serums with high titers in the undiluted state lose their protective capacity on slight dilution; furthermore, it is rather precarious to attempt to work in the five to ten LD_{50} range because (*a*) the mice may succumb irregularly and (*b*) in attempting to hit this dose one may either overshoot the mark and use fifty or more LD_{50} doses, which is too much virus for a satisfactory test, or undershoot the mark and have too many control mice survive. For this reason I prefer, for routine purposes, to use the intracerebral test with undiluted serum against three tenfold dilutions of virus and to use simultaneous titration of the virus in each test. Thus, if the virus is expected to have a titer of 10^{-8} to $10^{-8.5}$, the final virus dilutions tested with the unknown serums are 10^{-6}, 10^{-7} and 10^{-8}, while the virus titration is carried out with normal, undiluted, heated rabbit serum in final virus dilutions of 10^{-6}, 10^{-7}, 10^{-8} and 10^{-9}; the use of 4 mice per dilution permits the use of a single mouse box (25 by 18 by 14 cm.) for each serum without undesirable overcrowding. The results obtained with many human and other serums have led me to regard an approximately tenfold or greater increase in the neutralization index as a significant rise in antibody when the value for the earliest serum tested is in the range of 10 to 50 or more; however, when the serum obtained at the acute stage of the disease is negative with an index of less than 10, an increase in a later specimen to an index of 20 to 40 is suggestive of a rising titer and an index of 50 or more may be regarded as indicating the definite appearance of antibody in a patient who originally had none demonstrable by the intracerebral test.

[9b] Control studies on healthy vaccinated military personnel carried out during the summer of 1946 indicated that a few persons may develop specific complement fixing titers of this magnitude in response to vaccination Therefore a definite diagnosis of infection with Japanese B virus cannot be made in case 12

TABLE 9.—*Influence of Small Excess of Complement on Sensitivity of Fixation in Mixtures of Human Serums and Japanese B Encephalitis Antigen*

	1.7 to 2 Units of Complement					2.5 Units of Complement				
	Original Serum Dilution					Original Serum Dilution				
Human Serum	1:2	1:4	1:8	1:16	1:32	1:2	1:4	1:8	1:16	1:32
Rqw. 3 days after onset	1	0	0	..	..	0	0	0	0	
14 days after onset	4	2	±	..	..	0	0	0	0	0
21 days after onset	..	3	±	0	..	..	0	0	0	0
34 days after onset	..	4	4	4	2	4	4	2	0	0
Sid	4	2	1	0	0	..	0	0	0	0
Gron.	4	4	2	..	..	3	±	0	0	0
Str	4	4	3	1	.	2	0	0	0	

See explanatory footnotes (* and †) in table 3.

Among the 12 patients with negative serologic tests presented in table 7, a definite clinical diagnosis of encephalitis is possible only in patient 10, who was so ill during the acute phase of the disease that a fatal outcome was expected; but while he recovered physically his mental status was such that he had to be transferred to the neuropsychiatric service. Although the last specimen available on this patient was obtained only twenty-five days after onset, the tests for Japanese B encephalitis antibody were so unequivocally negative that either this may represent a case of unusually late development of antibody which was missed, or the infection was not caused by the Japanese B type of encephalitis virus. All the other patients either had mild, transitory illnesses or had something atypical in their history, but it was natural to suspect that their disease was possibly caused by Japanese B type of encephalitis virus during the course of an outbreak. Subsequent to my departure from Okinawa, Dr. W. McD. Hammon observed and obtained serums from military patients in 14 additional cases of relatively mild illnesses which were suggestive of some form of virus infection of the nervous system; however, only 1 of the 14 had any demonstrable titer of antibody against the Japanese B type of encephalitis virus (personal communication from Dr. Hammon), and because this 1 had received two doses of vaccine six and four days, respectively, before onset, it is not certain whether his antibody was due to infection or vaccination. It seems to me especially noteworthy that in this group of cases it was not possible to prove infection by the Japanese B encephalitis virus in patients who exhibited only nuchal and spinal rigidity, transitory reflex changes and pleocytosis as the only manifestations indicative of involvement of the nervous system—the syndrome ordinarily described as aseptic or lymphocytic meningitis, and, when it is seen during the course of a poliomyelitis epidemic, as nonparalytic poliomyelitis. Although there is good evidence, based on isolation of virus from the stools, that such a syndrome can actually represent nonparalytic poliomyelitis, there was no evidence that during this outbreak it represented a mild form of encephalitis due to Japanese B virus. However, in patients who exhibited this syndrome plus a certain amount of drowsiness, lethargy and mental confusion positive serologic evidence for infection with the Japanese encephalitis virus was obtained.

The infections of the 4 patients (1, 2, 3 and 11) exhibiting severe pain along the course of the sciatic nerves and weakness or actual paralysis of the lower extremities associated with pleocytosis were considered clinically as possible "radicular types of encephalitis" (a textbook syndrome) but may actually have been instances of poliomyelitis. Poliomyelitis perhaps might also have been the more correct diagnosis in case 7, despite the diplopia and bilateral positive Oppenheim signs, for this patient as well as 1, 2, 3 and 11, just mentioned, at no time exhibited any lethargy or mental confusion.

---

[10] Mouse LD_{50} doses: LD_{50} is that dose having a lethal effect on 50 per cent of animals used in experiments.

CLINICAL MANIFESTATIONS IN SEROLOGICALLY POSITIVE MILITARY CASES

The adjective "lethargica" commonly reserved for von Economo's (type A) encephalitis is most applicable to the disease as it was seen in the American military patients in whom a positive diagnosis of encephalitis due to Japanese B virus was ultimately established by serologic methods. Drowsiness, lethargy, mental confusion and disorientation, and semicoma or complete coma in the more severe cases, occurring in association with high fever, nuchal and spinal rigidity, leukocytosis and pleocytosis constituted the most important manifestations for diagnostic purposes. The onset was usually sudden with fever and extremely severe headache, although the mental confusion and lethargy and even the stiffness of the neck and spine (the latter easily demonstrated by the kiss-the-knee test) frequently did not appear until several days later. Actual paralysis was seen only once in this group of patients, and that in a case with early fatal termination. True convulsions were also seen only in the 2 fatal cases. Dissociated eye movements which were not infrequently seen in the native children with the disease[2] were observed in only 1 patient, again in a case with a fatal termination. The pupils, however, were usually contracted and reacted poorly to light. Diplopia did not occur in this group.

A milky, sticky exudate was often seen about the eyes. Athetosis, incoordination and tremor of the hands were not uncommon, and difficulty in writing could be easily demonstrated. Difficulties in speech ranged from slurring to complete aphasia. The reflexes were variable. The abdominal reflexes were usually absent, while the tendon reflexes were most often exaggerated, although occasionally they might become diminished or disappear. Positive great toe reflexes were uncommon.

The fever was high and lasted for from seven to eleven days except in 1 patient in whom a bronchopneumonia also developed. The temperature and pulse curves are illustrated in the charts of 4 patients (charts 1 to 4). The remittent type of temperature curve may perhaps be due to the administration of acetylsalicylic acid, but that is not certain. A relative bradycardia was invariably present during the febrile phase, and a pulse rate of 50 to 60 was common after defervescence. A leukocytosis in the range of 10,000 to 25,000 with a definite increase in the number of mature and immature neutrophils was the rule in these patients and was also found regularly in the native cases by Lieut. John W. Norcross (MC), U.S.N.R.[2] The cerebrospinal fluid was clear, under normal or slightly increased pressure, and pleocytosis, ranging from 22 to 660 white cells per cubic millimeter in the first specimen examined was present in all patients of this group. The cells were predominantly mononuclear, although in 1 acutely ill patient (11 in table 6) most of the 400 cells seen on the third day of the disease were reported as polymorphonuclear. The protein concentration was normal or slightly increased early in the disease, while during convalescence a 3 or 4 plus Pandy reaction was not uncommon. Pellicle formation was observed in at least 1 patient (5 in table 6) on the fifth day of the disease.

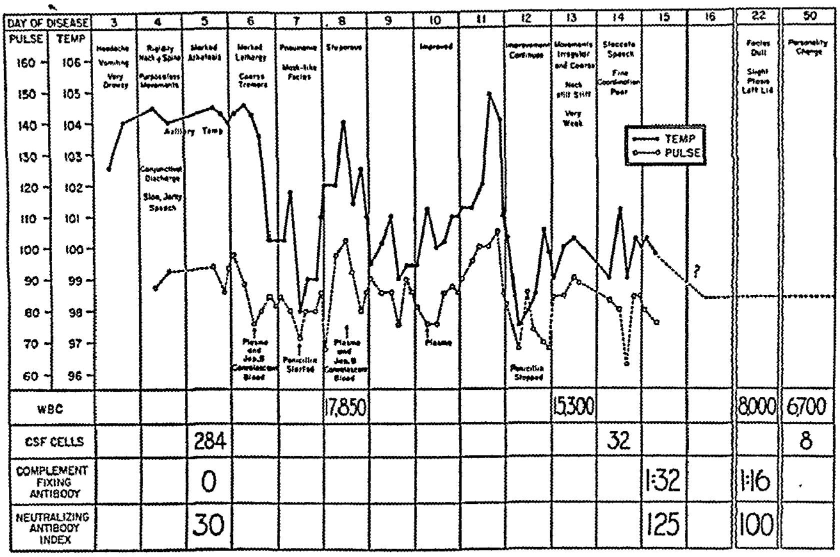


Chart 1.—Japanese B encephalitis in American soldier, M. O. T., aged 29, on Okinawa in 1945.

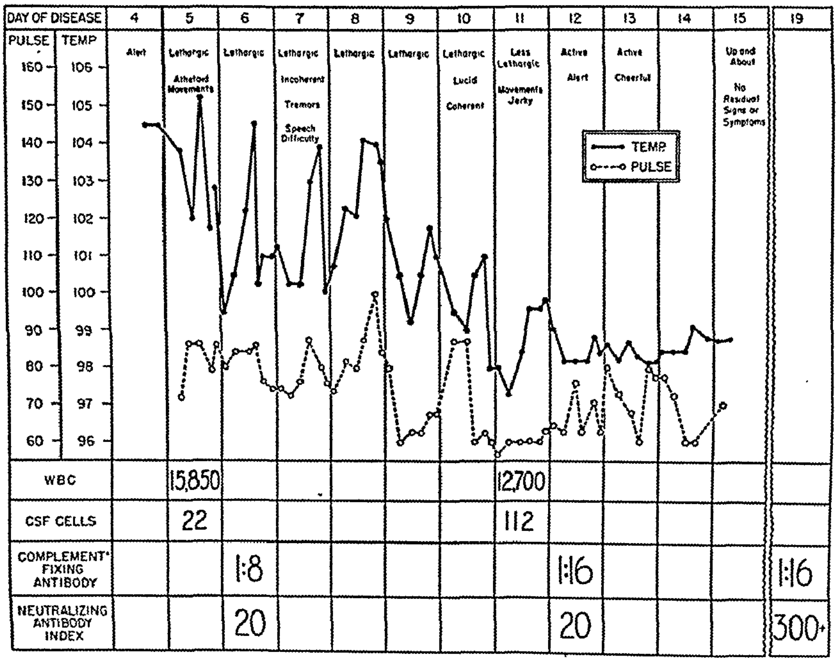


Chart 2.—Japanese B encephalitis in American soldier, R. C. W., aged 23, on Okinawa in 1945.

Convalescence was slow, and lethargy, incoordination, tremors and "nervousness" usually persisted for weeks after defervescence. The condition of at least 1 patient (5 in table 6) was still rated as poor seven weeks after onset, with masklike facies, somnolence, hyperirritability and distinct personality change manifested by stoicism, perverse obstinacy, moroseness, disinclination to talk and urination on the floor of the ward. I have had an opportunity to see some of these patients for only short periods during the acute phase of the infection, and I am indebted to Major Wiley L. Forman, Major Arthur H. Rosenblum and Capt. Charles P. C. Logsdon of the Army Medical Corps and to Lieut. Comdr. W. Kees (MC), U.S.N.R., for the clinical observations and notes on these patients which they were good enough to supply.

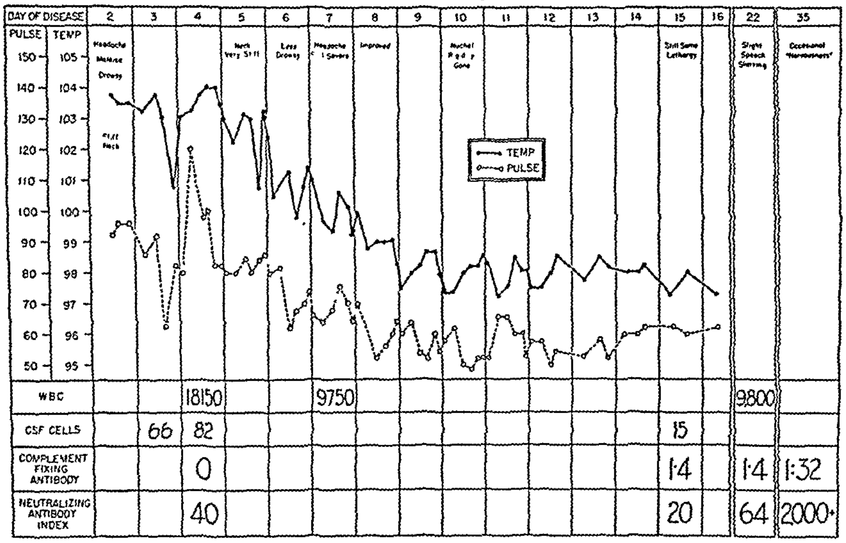


Chart 3.—Japanese B encephalitis in American soldier, G. L. R., on Okinawa in 1945.

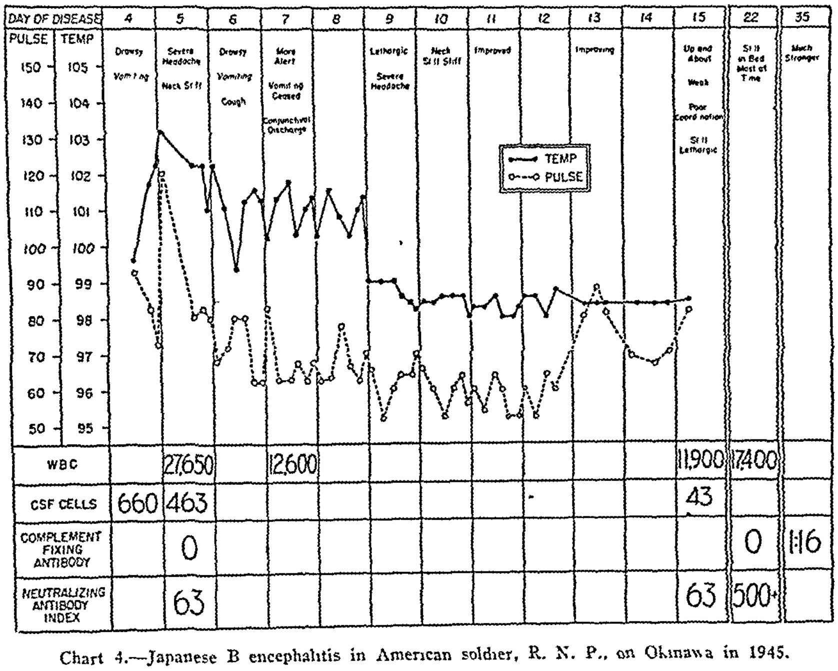


Chart 4.—Japanese B encephalitis in American soldier, R. N. P., on Okinawa in 1945.

EPIDEMIOLOGIC ASPECTS

Endemicity of Encephalitis on Okinawa.—The story related by native physicians suggested that "summer" encephalitis was endemic on the island, occurring yearly with an incidence of usually about 5 infections per 10,000 population and on a few occasions 17 per 10,000, predominantly in the younger age groups. To check on this hypothesis, blood was collected from 60 natives without history of encephalitis. The ages represented ranged from 1 (Okinawan 2, because they are regarded as 1 year old at birth) to 61. The results of intracerebral neutralization tests, using the Okinawa strain of Japanese encephalitis virus, on 57 of these serums shown in table 10 indicate an increasing incidence of antibodies with age. The presence of antibodies in 90 per cent of the 30 persons who were 20 years of age and older and in 55 per cent of 11 persons in the 10 to 19 year age group not only indicates how widespread infection with this virus has been on the island but also explains why, in recent years at least, the clinically manifest disease has been seen predominantly in children. The complete negative results in the 16 children of the 1 to 9 year age group are either fortuitous (Lieut. J. L. Peck informed me that a few positive results were obtained in this age group in similar tests carried out in the laboratory of Naval Medical Research Unit 2) or an indication that the incidence of infection has been lower in recent years. It was of interest to determine to what extent serums exhibiting low, intermediate and high neutralization indexes may also contain complement-fixing antibodies, and the results of such tests on the serums of 12 natives, 10 to 57 years of age, without history of encephalitis, are shown in table 11. Of the 10 serums which were *not anticomplementary and did not cross with the control Western type equine encephalomyelitis antigen*, only 1 gave significant fixation in a dilution of 1 : 8. The most probable explanation for this observation, in view of the data on recent convalescents shown in table 6, is that the complement-fixing antibody for Japanese B type of encephalitis virus antigen disappears at a certain, as yet unknown, period after infection (at least in most instances), while the neutralizing antibody persists. The presence of a high titer of complement-fixing antibody may thus be indicative of recent infection. This fact might be utilized as an epidemiologic tool to determine recent infection rates in certain areas, although the interpretation of the data would hinge on how long the complement-fixing antibody persists.

Vertebrate Hosts Other than Man.—The work of Hammon and his associates,[10a] as well as the isolation in the last few years first of St. Louis encephalitis virus from mites, Dermanyssus gallinae, taken from chickens possessing neutralizing antibodies against this virus,[11] and then of Western type equine encephalomyelitis virus[12] from the same species of mites taken from chickens during an outbreak of the disease in Texas, followed by the demonstration that this type of mite may serve as a true reservoir of the virus by virtue of transovarian passage from one generation of mites to another,[13] made it desirable to determine what vertebrate hosts are infected by the Japanese B virus on Okinawa, and especially whether or not chickens were involved. Although the chicken population on Okinawa and adjacent islands had been greatly reduced by the time the outbreak of encephalitis appeared, a certain number of them could always be found in any native village. The other domestic animals were horses, goats, pigs and, infrequently, a cow, which shared the same living quarters with the human beings. I caught only a fleeting glance at two dogs and a single cat during my entire stay on Okinawa; rats and shrews were plentiful. The blood of 15 horses, 10 goats, 1 cow and 12 chickens from either Heanza or Okinawa was tested for neutralizing antibodies against the Okinawa strain of Japanese B type encephalitis virus. The results shown in table 12 indicate that all 15 Heanza or Okinawa horses (but none of 10 American horses tested simultaneously), the 1 Heanza cow and 3 of the 10 Okinawa goats possessed good neutralizing antibodies, while none were found in any of the 12 Heanza or Okinawa chickens taken from areas where multiple human cases of encephalitis had occurred. Furthermore, either few or no mites could be found on these and other chickens in the encephalitis zones. Another group of Okinawa horses tested by Hodes, Thomas and Peck[14] were also found to contain complement-fixing antibodies for the Japanese B virus. The absence of antibodies in the available chickens and the great scarcity of other birds on Okinawa make one wonder whether some mammalian host such as the horse, goat or cow, or the rats and shrews which unfortunately (for lack of live traps) were not tested, may not play the same role for Japanese B encephalitis on Okinawa as has been suggested for the chicken in the case of St. Louis type encephalitis and Western type equine encephalomyelitis in the United States.[10a] It is noteworthy, however, that Hammon and Reeves[10a] recently reported outbreaks of the two last mentioned diseases in Texas and Nebraska in which chickens could not be implicated as the intermediate hosts from which the mosquitoes derive their initial infection and suggested that the vertebrate hosts, and possibly the invertebrate vectors, may vary from one area to another. Mites or related ectoparasites were not found on the Okinawan horses, goats or pigs by Capt Carl T. Parsons, Sanitary Corps, who was the entomologic associate in this work. He did find a large number of mites on the single available Heanza dove, but inoculation of mice with 130 of these mites yielded no virus

---

[10a] Hammon, W. M., and Reeves, W. C.: Recent Advances in the Epidemiology of the Arthropod-Borne Virus Encephalitides Including Certain Exotic Types, Am. J. Pub. Health 35: 994-1004, 1945.

Table 10—*Neutralizing Antibodies for Japanese B Encephalitis (Okinawa Strain) in Serums of Okinawans of Various Ages Without History of Encephalitis*

Age Group *	No Positive	% Positive	Intracerebral Neutralization Indexes of Individual Serums
1 to 9	0/16	0	—2, —1, —1, 1, 1, 2, 2, 2, 2, 2, 2, 4, 5 0, 8 5, 10 5, 10 5 †
10 to 19	6/11	55	—2,2, 2, 3, 10+ 13 ‡, 50, 400, 1,600, 3,000+, 5,000+, 5,000+
20 to 29	9/10	90	3, 100, 500, 500, 1,000, 3,000+, 3,000+, 4,000+ 5,000+, 5,000+
30 to 61	18/20	90	2, 3, 63, 63, 63, 200, 200, 200+, 400, 630, 630, 3,200+, 3,200+, 4,000, 4,000, 4,000, 6,300+, 6,300+, 6,300+, 6,300+

* The indicated ages are in accord with American and European usage and 1 year less than those given by the Okinawans, who are regarded as being 1 year old at birth

† 10 5 indicates that two tests were performed and that the neutralization index in one was 10 and in the other 5

‡ 10+ 13 in this case was counted as negative, but the result may be regarded as equivocal

Table 11—*Correlation Between Neutralizing and Complement-Fixing Antibodies in Serums of Okinawa Natives Without History of Encephalitis*

Serum Used Age of Donor Years	Intracerebral Neutralization Index	Japanese B Antigen + Serum in Indicated Dilution					WFE Control + Serum Diluted			Saline + Serum Diluted	
		Und	1:2	1:4	1:8	1:16	Und	1:2	1:4	Und	1:2
39	63	0	0	0	0	0	0	0		0	0
54	63	.	0	0	0	0		0		.	0
31	400		1	±	±	±		1			0
15	400	4	2	±	0	.	3	2	.	2	2
10	1,600	0	0	0	0		0	0		0	0
14	3,000		0	0	0	0		0			0
29	4,000+		0	0	0	0		0	0		0
47	4,000+		0	0	0	0	.	0	0		0
20	5,000+	.	4	4	2	0		0	0		0
25	5,000+		4	4	2	1		2			0
50	6,300+		±	0	0	0		0	0		0
57	6,300+	2	±	0	0	0	0	0		0	0
Recent convalescent control 48 days after onset	80		4	4	4	4		0			0

Note 1:7 units of complement and 16 units of antigen used in this test See explanatory footnotes (* and †) in table 3

Insect Vectors.—Both Japanese[16] and Russian[17] investigators have reported the isolation of Japanese B encephalitis virus from Culex tritaeniorhynchus and Culex pipiens var. pallens mosquitoes caught in nature. These mosquitoes as well as Aedes togoi, Aedes albopictus, Aedes japonicus[18] and Culex quinquefasciatus,

Table 12—*Neutralizing Antibodies for Japanese B Encephalitis (Okinawa Strain) in Serums of Certain Ryukyu Animals and in Ten American Horses*

Animal Serums Tested	No Positive	% Positive	Intracerebral Neutralization Indexes
Heanza horses . .	12/12	100	100, 160+, 630+, 630+; all others 1,000+
Okinawa horses	3/3	100	100+, 160+, 160
United States horses *	0/12	0	1, 1, 1, 1, 1, 1, 1, 1, 2, 10 30 †
Okinawa goats	3/10	30	125+, 200+, 1,000+ 1, 1, 3, 4, 4, 20, 13
Haenza cow	1/1	.	100
Haenza and Okinawa chickens	0/12	0	1, 1, 1, 1, 1, 1, 1, 1, 3, 8, 8, 16—?

* These horses were quartered in the stables of the Sharp & Dohme, Inc, laboratories in Pennsylvania, and I am indebted to Dr. Bettylee Hampil for sending me their blood

† 10 30 indicates that two tests were performed and that the neutralization index in one was 10 and in the other 30

---

[11] Smith, M G, Blattner, R J, and Heys, F M The Isolation of the St Louis Virus from Chicken Mites (Dermanyssus gallinae) in Nature, Science **100:** 362 363, 1944

[12] Sulkin, S E Recovery of Equine Encephalomyelitis Virus (Western Type) from Chicken Mites Science **101:** 381 383, 1945

[13] Smith, M G, Blattner, R J, and Heys, F M Further Isolation of St Louis Encephalitis Virus. Congenital Transfer of Virus in Chicken Mites (Dermanyssus gallinae), Proc Soc Exper. Biol & Med **59:** 136 138, 1945

[14] Hodes, H L, Thomas, L, and Peck, J L Complement Fixing and Neutralizing Antibodies Against Japanese B Virus *in the* Sera of Okinawan Horses, Science **103:** 357 359, 1946

[15] Deleted by author

[16] Inada, R Compte rendu des recherches sur l'encephalite epidémique au Japon, Bull Office internat d hyg pub **29:** 1389 1401, 1937.

[17] Petrischeva, P. A, and Shubladse, A K The Vectors of the Autumn Encephalitis in the Maritime District, Arch Dis Sc. Biol **59:** 72 77, 1940

[18] Mitamura, T, Kitaoka, M; Mori, K, Okubo, K, and Tenjin, T Ueber den Infektionsmodus der japanischen *epidemischen* Enzephalitis mit besonderer Berücksichtigung der experimentellen und epidemiologischen Beweise für die Krankheitsübertragung durch Mücken, Tr. Soc path jap **28:** 135 145, 1938 Petrischeva and Shubladse[17]

Culex tarsalis, Aedes dorsalis, Aedes nigromaculis, Culiseta incidens and Culiseta inornata[19] have been demonstrated experimentally to be potential vectors. C. pipiens was not found on Okinawa and C. tritaeniorhynchus was practically absent during late July and August in many districts where cases of encephalitis continued to appear. C. quinquefasciatus was present in abundance for several months before the outbreak and continued to be the mosquito most readily found in homes during August. For every hundred C. quinquefasciatus that Captain Parsons caught in homes he found only two or three Armigeres subalbatus. A few larvae of A. togoi were discovered, but adult mosquitoes could not be found. A. albopictus were not found by Captain Parsons in the encephalitis zone he investigated during August, although this mosquito occurred in varying numbers in other parts of the island. Mosquitoes of the species Anopheles hyrcanus sinensis, although not collected because they are only rarely found in houses and their resting place is still unknown on Okinawa, were not readily controlled by the spraying of DDT (4,4′-dichlorodiphenyltrichloroethane) from airplanes in the mountainous northern portions of the island where many rice paddies, located in narrow precipitous valleys, were inaccessible. C. quinquefasciatus was regarded as the most probable vector, and extracts of a number of pools, which consisted of about 100 of these mosquitoes, were inoculated into mice to test for virus. Satisfactory tests on 3 such pools did not yield any virus, but this is not enough to indicate that the species was not a vector. However, if it had been a vector on Okinawa one would have expected to find evidence of infection in chickens,[20] which are known to be bitten by this mosquito in the United States,[21] and yet the chickens, unlike the horses, goats and cow, were without neutralizing antibodies for the virus. One must consider the possibility, therefore, that some other mosquito biting the larger domestic animals and human beings by preference might have been the vector on Okinawa.

What I looked for, and did not find, was direct evidence for the working hypothesis that a mitelike insect, constituting the real reservoir of the virus through winter and summer and from generation to generation, gives rise to virusemia in one or another of the domestic animals, with subsequent dissemination to human beings and other hosts by the mosquitoes which breed in large numbers during the hot spell following the rainy season. This may still be the true epidemiologic cycle despite the fact that neither the "mite" nor the mosquito which might have carried this virus has as yet been found on Okinawa.

Influence of Proximity to Native Population and Domestic Animals on the Occurrence of Encephalitis Among Military Personnel.—Not a single case of encephalitis occurred among the two thirds or more of the total forces which occupied the southern portion of Okinawa, from which practically the entire native population and their domestic animals had been removed for military reasons. It is also noteworthy that all the proved cases of Japanese B encephalitis in military personnel occurred in the extreme northern portion (Hentona, Taira and Motobu peninsula districts). According to Major W. G. Downs, M. C., in charge of preventive medicine for the Island Command, this was also the area in which the control of mosquitoes breeding in rice paddies was much less complete because of the difficult terrain, and in which an outbreak of malaria due to Plasmodium vivax affecting 6,000 to 8,000 natives and several hundred troops occurred at the same time as the epidemic encephalitis.

USE OF MOUSE BRAIN VACCINE

The Japanese B encephalitis mouse brain vaccine developed in 1942 in this country[22] was originally a lyophilized preparation, in which the solution of formaldehyde was neutralized by sodium bisulfite. Because preliminary trials at the laboratories of Sharp & Dohme, Inc., indicated that good lyophilization could not be obtained by the large scale production methods used in 1943, the vaccine that was finally prepared by different biological houses for the Armed Forces was a preparation in liquid form, consisting of a 10 per cent suspension of mouse brain in isotonic solution of sodium chloride, in which the virus had become inactivated by 0.2 per cent solution of formaldehyde in the cold. The minimal requirements for the protective potency of the vaccine were that at least 0.01 cc. of it should constitute a minimal immunogenic dose as determined by an intraperitoneal method of assay in 18 to 20 Gm. mice.[23] The vaccine administered in two doses three days apart produces immunity in mice within one week after the first dose at a time when no antibodies are demonstrable in the blood by the intracerebral neutralization test. Since the vaccine was to be used in the face of an epidemic, two doses of 2 cc. each given three days apart were decided on for general use. Preliminary tests on 35 persons receiving this amount of a vaccine with a minimal immunogenic dose of 0.0054 cc. indicated that in 18 of 25 (72 per cent) persons 35 years of age or younger and in 2 of 10 (20 per cent) 36 years of age or older antibody demonstrable by the intracerebral neutralization test had developed two weeks after the first dose.[23] Since vaccinated mice show good resistance to peripheral inoculation of virus without demonstrable antibody by the intracerebral test, it was believed that the selected dosage might be sufficient to impart the needed resistance during the short epidemic period of encephalitis due to the Japanese B type of virus. It must be granted that this dosage may be inadequate, but it was desirable to avoid administration of large amounts of this vaccine. The commercially prepared vaccines assayed 0.003 cc. to 0.01 cc. for the minimal immunogenic dose and were transported to Okinawa in insulated boxes containing ordinary ice.

Smorodintseff[24] reported that a similarly prepared vaccine has proved effective against the Russian autumn encephalitis (Japanese B) in that among 8,030 unvaccinated persons there were 59 cases of encephalitis with 18 deaths while among 10,485 vaccinated persons there were only 2 mild cases and no deaths. The military situation and other conditions obtaining on Okinawa in July and August 1945 did not permit any controlled study of the protective value of the vaccine. It was considered, along with mosquito control, among the measures that may reasonably be used in the attempt to protect exposed troops against a disease with a reported average case fatality rate of 60 per cent. Approximately 800 to 1,000 military government per-

---

[19] Reeves, W. C., and Hammon [illegible] [illegible]mission of Japanese B Encephalitis Virus by S[illegible]) of North American Mosquitoes, J. Exper. M[illegible]

[20] Hammon, W. M.; Reeves, W[illegible] Japanese B Encephalitis Virus in the Blood o[illegible] Chickens, Proc. Soc. Exper. Biol. & Med. 61: [illegible] Hammon.[19]

[21] Hammon, W. M.; Reeves, W. C., and Galindo, P.: Epidemiologic Studies of Encephalitis in the San Joaquin Valley of California, 1943, with the Isolation of Viruses from Mosquitoes, Am. J. Hyg. 42: 299-306, 1945.

[22] Sabin, A. B.: The St. Louis and Japanese B Types of Epidemic Encephalitis: Development of Noninfective Vaccines: Report of Basic Data, J. A. M. A. 122: 477-486 (June 19) 1943.

[23] Sabin, A. B.: Unpublished data.

[24] Smorodintseff, A. A.: J. Mikrobiol. Epidemiol. Immunol. Moskva 11-12: 61-68, 1942. Personal communication, 1944.

TABLE 13.—*Summary and Analysis of Neurologic Reactions Reported for 55,403 Persons After Vaccination with Japanese B Encephalitis Mouse Brain Vaccine on Okinawa (1945)*

Case	Interval Between Onset of Symptoms and Vaccination	Signs and Symptoms	Outcome	Diagnosis	Relation to Vaccination
1. C. C.	On day of 1st dose	Pain in back and thoracic region; next day the left trapezius, serratus and sternocleidomastoid muscles were weak	Later discounted as "reaction" by reporting officer	?	..
2. C.	5 days after 2d dose (8 days after 1st dose)	Drowsy	Drowsy in hospital for 2 or 3 days; recovery without noteworthy events	None	..
3. J. B. G.	5 days after 2d dose 8 days after 1st dose	Headache, dizziness, blurring of vision; complained of stiff neck but no nuchal rigidity. "Moderate weakness of quadriceps muscle." CSF 2 cells	6 days after onset "headache gone; muscular weakness gone"	?	?
4. J. W. J.	4 days after 1st dose 1 day after 2d dose	Numbness of left forearm and wrist drop 2 days later; temp. and CSF normal; history of chronic alcoholism	Function in forearm returning 9 days after onset	Peripheral neuritis involving left radial nerve; "Sat. night paralysis"	..
5. H. R. K.	2 days after 1st dose (2d dose given 4 days after 1st)	Generalized aches, pains and weakness growing progressively worse at night; examination 9 days after onset revealed apparent weakness in all muscle groups; hamstrings tight and painful with hyperesthesia on pressure; kneo jerks, ankle jerks and biceps reflex absent; no fever; CSF 2 cells, globulin negative but protein recorded as 178.2 mg. per 100 cc.	No information available	Peripheral neuritis ?; infectious polyneuritis ?	Very questionable because symptoms appeared 2 days after vaccine
6. C. A. T.	10 days after 1st dose 6 days after 2d dose	Numbness and weakness of arms and legs; no pleocytosis, 3 days after onset; 2 weeks after onset, motor weakness of arms and legs but no reflex changes	4 weeks after onset evacuated with note: "Extreme muscular weakness, fatigue, altered superficial and deep reflexes." No other information available	Polyneuritis ?	Possible
7. G. B. L.	15 days after 1st dose (There is some question as to whether 2d dose was given 10 days after 1st)	"Headache, stiff neck and malaise sudden onset of flaccid paralysis of both lower extremities excluding the feet, and marked weakness of the forearms and fingers; possible weakness of right lateral rectus muscle; absent kneo jerks and ankle jerks; temperature never over 99.6 F.; CSF 3 cells"	Much improved 10 days after onset; paralysis receded with return of leg reflexes; walking 19 days after onset with only slight weakness of both quadriceps	Infectious polyneuritis ?	Possible
8. E. J.P.	7 days after 1st dose 3 days after 2d dose	Gradual onset of weakness in arms and legs; at peak of weakness could not raise hands to wash face and was able to rise from a chair only by pulling himself up with hands; sensation undisturbed and all reflexes reported normal; reports on muscle atrophy incongruous; CSF, 180 mg. protein per 100 cc.; afebrile	Improvement began 10 days after onset. Examination by Dr. C. D. Aring 6 months after onset revealed nomal gait, no muscle atrophy or weakness and no abnomalities beyond disturbed emotional state.	Infectious polyneuritis ?	Possible

sonnel operating in areas where most of the civilian cases were occurring were vaccinated between July 15 and 20, i. e., about seven to ten days after the first cases had been reported. It is perhaps noteworthy that the single case of encephalitis (onset August 8) which occurred among military government personnel was in a hospital corps man (case 7, table 6) who was not vaccinated. When the number of civilian cases continued to increase and a certain number of probable and suspected cases of encephalitis had been diagnosed in military personnel, it was decided to vaccinate those who were in close proximity to areas where civilian cases were occurring. This decision was reached at a time when the future course of the outbreak could not be predicted and was largely based on the consideration that it was not wise to gamble on the chance that relatively few cases would occur or to rely entirely on mosquito control measures.

Enough vaccine was distributed to provide two doses of 2 cc. each for about 77,000 persons, and 60,000 to 70,000 were probably vaccinated. Through the efforts of Major W. G. Downs, M. C., reports were received on 53,139 persons who received the two doses and 2,274 who had only one dose, and the following information originates in part from his summary. The 61 local reactions which were reported consisted mainly of pain and swelling at the inoculated site with, in some instances, enlargement of the axillary lymph nodes and included 5 cases of infections requiring incision and drainage. The latter all came from two small units and may have represented a break in aseptic technic. There was also a good deal of variation either in what was considered a local reaction or in recording it, for one Army division with 12,380 men inoculated with two doses reported only 1 local reaction, while a Marine division with 18,991 men similarly inoculated reported 35 local reactions. Systemic reactions characterized generally by headache, fever, malaise and occasionally nausea and vomiting occurring within twenty-four to forty-eight hours after inoculation were reported in only 19 persons, but it is probable that there were more. However, it was apparent that systemic reactions were infrequent and certainly much less common than similar reactions following the administration of typhoid vaccine. Nineteen allergic reactions characterized by urticaria sometimes with angioneurotic edema and often with moderate difficulty in breathing, all with good response to epinephrine, were reported. Comdr. B. R. Reinertsen (MC), U.S.N.R., kindly supplied the following note on 1 such case: "Fifteen minutes after injection, the patient noted nausea, tightness of the throat, mild dyspnea and tingling of the fingers. Examination revealed a minimal amount of cyanosis. Twenty minutes after the injection of a solution of 5 minims (0.3 cc.) of epinephrine subcutaneously, there was relief of the dyspnea, sensation of tightness of the throat and tingling. Ten minutes later there developed a generalized urticarial rash with discrete large wheals. Again the patient was treated with a solution of 3 minims (0.2 cc.) of epinephrine subcutaneously. Urticaria subsided in approximately one hour, and there were no symptoms remaining." Since mouse brain represented a new antigen for American military personnal one must consider the possibility that some, if not all, of these allergic reactions may be instances of sensitization to solution of formaldehyde resulting from previous inoculations with other vaccines preserved in this drug; 1 man in this group himself advanced the history of sensitivity to formaldehyde. Horsfall[25] has demonstrated that formalized protein can induce antibodies and hypersensitiveness not only to the homologous preparation but also to heterologous formalized proteins.

A summary and analysis of the 8 neurologic reactions which were reported are presented in table 13, and the following points are especially worthy of note:

1. There was not a single instance suggestive of demyelinating encephalopathy.
2. In 3 of the 8 cases (1, 2 and 3 in table 13) the manifestations were so slight that no diagnosis could be ventured.
3. In the 5 remaining cases, in which "neuritis" of one form or another was the most probable diagnosis, case 4 occurred in a chronic alcoholic addict and was of the typical "Saturday night paralysis" radial palsy variety, and case 5 had its onset two days after the first dose, rendering its relationship to vaccination highly improbable.
4. Only 3 significant neurologic reactions may possibly be related to vaccination; in the 2 more severe cases improvement began ten days after onset and almost complete recovery is reported.
5. Before the vaccination program was begun on Okinawa the diagnosis of neuritis was made in 3 military patients (cases 1, 2 and 3 in table 7) who were considered as possibly representing "radicular types of Japanese B encephalitis," but this diagnosis was not confirmed by serologic tests.
6. Various types of neuritis have previously been reported following the administration of foreign protein serums, typhoid vaccine and the like, although it is doubtful that the etiologic relationship of these inoculations is unequivocal.

Conclusions cannot be drawn regarding the protective value of the vaccine from the data obtained on Okinawa. For various reasons the general vaccination program did not get under way until the second week in August, and all the indications are that the epidemic was practically over by the last week of August—the last serologically proved military case had its onset August 21. It was pointed out earlier, in the remarks on the data in table 7, that in a considerable number of patients with varying signs suggestive of involvement of the nervous system there was no serologic evidence of infection with the Japanese B type encephalitis virus (the tests were also negative for St. Louis and Western equine types). Data obtained by Dr. Hammon, who remained in Okinawa after I left, showed that cases of this type continued to occur in September in both vaccinated and unvaccinated personnel. There were 2 vaccinated patients in this group who had complement-fixing antibodies as well as neutralizing antibodies (patient 12 in table 6 and patient Bro. tested by Dr. Hammon), who might represent infection with the Japanese B virus, although it is not improbable that their antibodies might have resulted from vaccination; 1 (Bro.) had his first symptoms six days after the first dose and four days after the second dose, while the other's symptoms began sixteen days after the first and thirteen days after the second dose of vaccine.

SUMMARY

1. During an outbreak of encephalitis in the native population on Okinawa during July, August and the early part of September 1945, there were 38 cases of suspected virus infection of the nervous system among American military personnel. A definite clinical diagnosis of encephalitis was probably justified in only 12 of these cases, and 2 of these patients died.
2. A virus which was identified as that causing the Japanese B type of encephalitis was isolated from the brain of a native who died on the fifth day of the disease. No virus could be obtained from the brain of the 1 military patient who died on the tenth day, despite the fact that multiple lesions were present in the areas from which material was taken for mouse inoculation. No virus was obtained from the lung tissue, cerebrospinal fluid or blood of patients with specific evidence of infection.
3. Serologic tests on serums obtained at different intervals after the onset of infection revealed that appreciable amounts of neutralizing antibody were present as early as three days after the onset of symptoms and that, as a rule, it was not possible, therefore, to establish a specific diagnosis on the basis of the absence of this antibody in specimens taken in the acute stage and its appearance during convalescence. It was necessary to demonstrate a definite increase in the amount of neutralizing antibody by a quantitative method.
4. It was established that 0.05 cc. of a patient's serum having an intracerebral neutralization index of 20 three days after onset was capable of neutralizing at least 500,000 mouse LD_{50} doses of Japanese B encephalitis virus by the intraperitoneal route.
5. With properly standardized antigens, the complement fixation test was found to be the method of choice for practical purposes. The necessary increase in titer or even its first appearance may be delayed for as long as five weeks after onset.
6. Neutralizing antibody without complement-fixing antibody was found early in the disease (in 1 instance for as long as three weeks after onset) and also in Okinawan natives without a history of encephalitis who had had their infection some time in the past.
7. With the aid of both the neutralization and complement fixation tests, a specific serologic diagnosis of encephalitis due to Japanese B type of virus was established only in 9 American military cases in addition to the 2 fatal cases.
8. In the patients in whom tests gave serological proof of Japanese B virus infection, drowsiness, lethargy, mental confusion and disorientation, semicoma or complete coma in the more severe cases, occurring in association with high temperatures, nuchal and spinal rigidity, leukocytosis and pleocytosis were the chief clinical manifestations of importance for diagnostic purposes.
9. The history of endemicity of the disease on Okinawa advanced by native physicians found support in the demonstration of neutralizing antibodies in 90 per cent of Okinawan natives without a history of encephalitis who were 20 years of age or older (group of 30), in 55 per cent of 11 persons in the 10 to 19 year age group and in none of 16 persons in the 1 to 9 year age group.
10. Neutralizing antibodies were also demonstrated in all 15 Heanza or Okinawa horses tested (not in any of 10 American horses tested for control), in at least

---

[25] Horsfall, F. L., Jr.: Formaldehyde and Serum Proteins: Their Immunologic Characteristics, J. Immunol. **27**: 553-567, 1934; Formaldehyde Hypersensitiveness: Experimental Study, J. Immunol. **27**: 569-581, 1934

3 of 10 Okinawa goats, in 1 Heanza cow but in none of 12 Heanza or Okinawa chickens This may indicate that domestic fowls probably do not play the same role in the epidemiology of encephalitis due to Japanese B virus on Okinawa that they are believed to play in some but not all, areas of the United States where the St Louis type encephalitis and the Western type equine encephalitis have occurred. The fact that the larger domestic animals such as the horse, goat and cow are attacked would point to mosquitoes, which bite these animals and human beings by preference, as the probable vectors

11 Although Culex quinquefasciatus was the predominant mosquito on Okinawa during the course of the outbreak, evidence was not found to indicate that it was the vector The negative, limited tests for virus as well as the absence of antibodies in chickens may indeed be regarded as evidence against it

12 No cases of encephalitis occurred among the more than two thirds of the total armed forces quartered in the southern part of the island from which almost the entire native population and their domestic animals had been removed The serologically proved military cases all occurred in the extreme northern portion of the island (Hentona, Taira and Motobu peninsula districts) where the control of mosquitoes breeding in rice paddies was incomplete because the difficult mountainous terrain made them inaccessible to DDT spray from airplanes and other means of dispersion, it was in these same areas that an outbreak of malaria due to Plasmodium vivax in 6,000 to 8,000 natives and several hundred troops occurred at the same time as the encephalitis

13 Japanese B encephalitis mouse brain vaccine was administered to 60,000 to 70 000 of the military personnel stationed in the northern portion of the island in proximity to civilian foci of infection Special conditions obtaining on Okinawa did not permit any conclusions in regard to the protective value of the vaccine or the adequacy of the dosage used There was not a single instance suggestive of demyelinating encephalopathy among the 53,139 persons receiving the two doses and the 2,274 who received only one dose of the vaccine, on whom reports were obtained Three cases of one form or another of "neuritis" reported in this group may or may not have been related to the vaccination, since cases of "neuritis" were also seen in persons who did not receive the mouse brain vaccine The report of 19 instances of allergic reactions in this vaccinated group suggests the possibility that in some, if not all of these, sensitization to solution of formaldehyde might have been a factor

ADDENDUM

Approximately 250 000 additional persons received two or three doses of mouse brain vaccine during the summer of 1946 Again there was not a single case suggestive of demyelinating encephalopathy At least 3 cases of a syndrome suggestive of infectious polyneuritis and in no way different from that occurring among unvaccinated personnel in the Far East were seen One of these patients died, and the only significant pathologic changes were found in the nerve roots and were of the same type seen in fatal cases of the Guillain-Barré infectious polyneuritis syndrome In this patient, as well as in several others who died of typical poliomyelitis subsequent to vaccination, demyelinating lesions were not found in the central nervous system

---

DEVELOPMENT AND USE OF BAL

A Review, with Particular Reference to Arsenical Dermatitis

MARION B SULZBERGER, M D
and
RUDOLF L BAER, M D
New York

Basing his opinion on previous studies, in particular those of A Heffter and collaborators in 1903 and 1908,[1] P Ehrlich[2] in 1909 stated his idea that the toxic action of arsenic is due to its attack on sulfhydryl (SH) compounds or "arsenoreceptors." These compounds were recognized as essential to biologic oxidation and reduction processes Many other investigators have advanced the thesis that metallic compounds and certain other poisons combine with the thiol groups of tissue enzymes or of members of oxidation and reduction systems, such as glutathione and cysteine, and thus inactivate these constituents necessary to life and function Long before World War II the concept was generally held that "detoxification" of arsenic and of certain other metallic and even nonmetallic compounds may be accomplished by administration of chemicals containing thiol groups One of the early fundamental studies of this effect was that of C Voegtlin, H A Dyer and C S Leonard,[3] who in 1923 demonstrated the detoxifying effects of sulfhydryl compounds (glutathione and cysteine) on arsenic And at about the same time Hopkins and Dixon[4] and Peters and Walker[5] found that certain arsenicals abolished the fixed —SH (sulfhydryl) in washed muscle tissue and in the "active" layer of the skin

THE DEVELOPMENT OF BAL (DIMERCAPROL) IN ENGLAND

However, it remained for the English scientists R A Peters, L A Stocken and R H S Thompson[6] to advance the theory that agents which "tie up" the —SH groups of the tissues will interfere with the activity of the pyruvate oxidase system, which is dependent on the —SH groups for its activity They then went on to show that dithiol compounds would tend to have greater affinity for certain arsenicals and would form relatively nontoxic and more stable compounds with these arsenicals than would either monothiols or "dithiol" proteins in the tissues They observed a close relationship between the arsenic content of a lewisite-kerateine compound and the thiol content of the kerateine One of their most significant findings was that when aqueous solution of kerateine was treated with lewisite, 75 per cent of the arsenic found in the lewisite compound was in combination with two thiol groups

---

Read before the Section on Dermatology and Syphilology at the Ninety Fifth Annual Session of the American Medical Association, San Francisco July 4, 1946

From the New York Skin and Cancer Unit of the New York Post graduate Medical School and Hospital of Columbia University College of Physicians and Surgeons

[1] Heffter, A, and Hausmann, M · Ueber die Wirkung des Schwefels auf Eiweisskoerper, Beitr z chem Physiol u Path **5**:213 1903 1904 Heffter, A Die reduzierenden Bestandteile der Zellen Med naturw Arch **1**, 81, 1907

[2] Ehrlich, P Ueber den jetzigen Stand der Chemotherapie, Ber d deutsch chem Gesellsch **1**:17, 1909

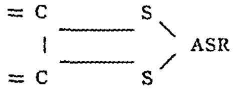
[3] Voegtlin, C, Dyer, H A, and Leonard C S · On the Mechanism of the Action of Arsenic upon Protoplasm, Pub Health Rep **38**·1882, 1923

[4] Hopkins, F G, and Dixon, M On Glutathione Thermostable, Oxidation Reduction System, J Biol Chem **54**:527, 1922

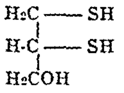
[5] Peters, R A, and Walker, E, cited by Peters, Stocken and Thompson[6]

[6] Peters, R A, Stocken, L A, and Thompson, R H S British Anti Lewisite (BAL), Nature, London **156**·616, 1945

Their idea was to compete for the arsenic with the dithiol-containing proteins in the tissues by offering simple synthetic dithiol compounds which might form *relatively nontoxic and stable ring compounds such as*



The researches of Peters, Stocken and Thompson led to the use of 2,3-dimercaptopropanol



$$\begin{array}{l} H_2C\text{—}SH \\ \;| \\ H\text{-}C\text{—}SH \\ \;| \\ H_2COH \end{array}$$

as a detoxifying agent against the arsenicals of chemical warfare. This agent could not only prevent the toxic action but reverse it, provided that "the toxicity had not been too long established." As this 2,3-dimercaptopropanol was first developed by the British as a decontaminating and neutralizing agent against lewisite, it was designated "BAL," for the "British anti-lewisite," and this has become the generally accepted name.[7]

THE EXPERIMENTAL USE OF BAL

Great hopes for the clinical effectiveness of BAL (dimercaprol) were based on these theoretic considerations as well as on in vitro tests. These hopes were fully realized when BAL was shown to be effective in both laboratory animals and human beings. The effectiveness of the compound could be demonstrated in damage and poisoning due to arsenical agents of chemical warfare as well as to arsenical therapeutic agents.[8]

The following summary gives some of the important effects of BAL against arsenical damage:

1. In both laboratory animals and human beings the damage to the skin due to arsenical vesicant agents of chemical warfare could be prevented by the preceding application to the skin of BAL preparations.[9]

2. In both laboratory animals and human beings the damage to the skin produced by arsenical vesicant agents of chemical warfare could be arrested and probably even reversed by the local application of BAL preparations two minutes to two hours after exposure to the damaging agent.[10]

3. The systemic poisoning produced in laboratory animals by various arsenical agents, including oxophenarsine hydrochloride, could be effectively counteracted by BAL. This was shown by a significant reduction in mortality rate and a longer survival time of the BAL-treated poisoned animals accompanied with an increased urinary excretion of arsenic.[11] While this beneficial action of BAL in systemic poisoning could be achieved by application of BAL to the skin, the parenteral administration of the drug was much more effective.[11b]

4. In vitro experiments on trypanosomes and spermatozoa demonstrated that organisms which had lost their motility and showed early degenerative changes due to *arsenic poisoning regained their motility and their normal* appearance after addition of a dithiol.[12]

EFFECT OF BAL IN ARSENICAL DERMATITIS

Dermatitis produced by antisyphilitic arsenical drugs was first treated by inunction with BAL in England.[6] Later on, patients with sensitization dermatitis due to adamsite, an arsenical chemical warfare agent, were treated by inunction in this country.[13] Intramuscular injections of BAL were also used in England.[14] The most extensive series of patients with arsenical dermatitis treated with BAL is that assembled by Eagle.[15] This series included patients treated at the Rapid Treatment centers of the United States Public Health Service. In these cases BAL was given intramuscularly, either as a 5 per cent solution in peanut oil with benzyl benzoate, 10 per cent; or as a 10 per cent solution in peanut oil with benzyl benzoate 20 per cent.

In Eagle's series there were 88 cases of arsenical dermatitis, 51 of which were typical cases of exfoliative dermatitis. BAL "usually stopped the progression of the inflammatory reaction and accentuated the healing process." In his series the average time for definite improvement in the exfoliating conditions which responded to treatment (80 per cent) was three days, and the average time for almost complete recovery was thirteen days.[16]

Among the cases of arsenical dermatitis which did not respond to treatment with BAL (20 per cent), gluteal abscesses or cellulitis developed at the site of injection in 5 cases. No such complication developed in any of the other cases of arsenical dermatitis or of other BAL-treated arsenical complications (see following paragraphs).

In a previously reported series of 40 cases of arsenical dermatitis (these are obviously included also in the aforementioned later series of 88 cases), Eagle[17] noted a mortality rate of 5 per cent and discussed the factors influencing the effectiveness of treatment with BAL in arsenical dermatitis. He stated that initially after administration of BAL there was a subsidence of edema and inflammation of the skin, a decided fall in temperature and a striking subjective improvement. While the weeping of the lesions subsided, the painless exfoliation often progressed and in some cases appeared to be accelerated as the dermatitis healed. The impression was gained that the longer the duration of the dermatitis prior to administration of BAL, the longer the time required for definite improvement. Cases of mild dermatitis with only pruritus and erythema responded most quickly (in from twenty-four to forty-eight hours).

---

[7] Waters, L. L., and Stock, C.: BAL (British Anti Lewisite), Science **102:** 601, 1945.

[8] It was, of course, soon realized that BAL might be effective also against poisoning by other metallic compounds. This has been shown to hold true for mercury poisoning (Gilman, A.; Allen, R., and Phillips, F. S.: 1944, 1945.* Longcope, W. T., and Luetscher, J. A., Jr.: 1945*). The use of BAL has also been studied in poisoning due to lead, stibium, vanadium, bismuth, *cadmium* and zinc.[7] Except in the case of cadmium the results have not been unequivocal or particularly encouraging, but further investigations are still required.

[9] Sulzberger, M. B.; Baer, R. L., and Lowenberg, C.: 1942 1943.*

[10] Sulzberger, M. B.; Barr, D. P.; Baer, R. L., and Lowenberg, C.: 1941, 1942, 1943.* Calvery, H. O.: 1943.* Peters and associates.[6]

[11] (*a*) Eagle, H.: 1942.* (*b*) Bunting, H.; Ordway, W.; Harrison, H.; Durlacher, S., and Albrink, W. S.: 1942, 1943.* (*c*) Eagle, H.; Magnuson, H. J., and Fleishman, R.: 1943, 1944.* (*d*) Cattell, McK.; Riker, W. F., and Rosenfeld, G.: 1944.* (*e*) Peters and associates.[6]

[12] *Eagle, H.: 1942, 1943; McLeod, 1942, cited by* Waters and Stock.[7]

[13] Longcope, W. T.; Wintrobe, M. M.; Luetscher, J. A., Jr., and Jager, B. V.: 1943.*

[14] Carleton and others, cited by Peters, Stocken and Thompson.[6]

[15] Eagle, H.: The Systemic Treatment of Arsenic Poisoning with BAL [illegible]. Ven. Dis. Inform. **27:** 114, 1946.

[16] [illegible] cates that the improvement which BAL effects in exfoliative dermatitis and other cutaneous eruptions due to arsenical agents is associated with detoxification of the arsenic. Often, but by *no means always, there is an increased urinary excretion of arsenic* at the time when the dermatitis improves. Nevertheless, the possibility should be seriously considered that some of the improvement in these cases may be due to another effect of BAL, namely, the furnishing of large quantities of —SH groups as "building blocks" for the amino acids of the epidermis and other tissues (Peters, B. A.: Exfoliative Dermatitis Treated with Cystine, Lancet **1:** 264, 1945. Sulzberger, M. B., and Baer, R. L.: *Year Book of Dermatology and Syphilology*, Chicago: The Year Book Publishers, Inc., 1945, p. 99).

[17] Eagle, H., and Magnuson, H. J.: 1945.*

EFFECTS OF BAL IN OTHER COMPLICATIONS OF ARSENICAL THERAPY

In other complications of arsenical therapy treated with BAL Eagle[15] again reported the most extensive and up-to-date series of cases, which may be summarized as follows:

Toxic Encephalitis.—Of 55 patients, of whom 40 were either convulsing or in coma at the time of start of BAL therapy, 44 recovered completely within from one to seven days and 11 died. In some cases resulting in death, delay of therapy or too small a dosage of BAL appeared to be partially to blame for the result.

Agranulocytosis.—There were 11 cases, with recovery in 10 and 1 death.

Aplastic Anemia.—In 3 cases there was no beneficial effect from BAL.

Jaundice.—Of 14 patients, 5 showed prompt response to BAL, 7 evidenced no effect from BAL and there were 2 in whom the effects were debatable.

Massive Overdosing of Oxophenarsine Hydrochloride.—Of 4 cases, there were 3 with prompt response and 1 ending in death (the patient received too small a dose of BAL).

"Arsenical Fever."—There were 44 cases, with prompt recovery in all.

DOSAGE AND SIDE EFFECTS OF BAL

A considerable amount of work has been done in laboratory animals[17] and in human beings[18] on the effective dosage of BAL for treatment of arsenical dermatitis and other complications of arsenical therapy. On the basis of all available data Eagle[15] suggested the following schedule of dosage: In severe complications 3 mg. per kilogram is given in each injection (1.8 cc. of a 10 per cent solution of BAL for a patient weighing 60 Kg.). For the first two days six injections are given at four hour intervals; four injections are given on the third day and two injections thereafter for ten days or until complete recovery. In mild complications 2.5 mg. per kilogram is given in each injection (1.5 cc. of 10 per cent solution of BAL for a patient weighing 60 Kg.). For the first two days four injections are given at four hour intervals; two injections are given on the third day and one or two injections thereafter for ten days or until complete recovery.

Pharmacologic studies in human beings[19] have shown that side effects barely begin at the 2.5 to 3 mg. per kilogram level when four injections of this dose are given at four hour intervals on two successive days. The incidence of side effects increases rapidly when the dose is raised to 4 and 5 mg. per kilogram. All the side effects observed even at these higher dosage levels have been of a temporary nature. They included nausea, vomiting, headache, burning sensation of the lips, mouth, throat and eyes, pain in the teeth, lacrimation and salivation, muscular aches, burning and tingling of the extremities, feeling of constriction of throat and chest and elevation of systolic and diastolic blood pressure. These side effects usually are at their maximum at fifteen to twenty minutes after intramuscular administration of the BAL preparation.[19a]

When applied to the skin BAL is a primary urticariogenic agent (whealing agent), and cutaneous allergic sensitization to BAL does occur.[20] Thus far these effects have not in any case interfered with the use of the drug in the treatment of arsenical complications.

Barbiturates have been recommended as an antidote for the more severe side effects of BAL.

SUMMARY AND CONCLUSIONS

1. The history of the development of BAL is reviewed.

2. The studies of the important antiarsenical effects of BAL in vitro in laboratory animals and in human beings are summarized.

3. The action of BAL in counteracting the toxic effects of antisyphilitic arsenicals is reviewed.

4. The recommended dosage schedule for BAL is presented, and the undesirable side effects of the drug are listed.

5. It is pointed out that BAL was developed on the basis of a fundamental theoretic concept, which led to in vitro studies, indicating that it was able to compete successfully with thiol-containing tissue enzymes in attracting the poisonous metallic ion.

6. BAL has been proved of great practical value in preventing and counteracting many of the toxic effects of different arsenicals and of mercury. Its effects against many other metallic and nonmetallic poisons are not yet proved and require further study.

962 Park Avenue.

ABSTRACT OF DISCUSSION

DR. JUD R. SCHOLTZ, Pasadena, Calif.: As Dr. Sulzberger and Dr. Baer were among those who did fundamental work in the development of BAL, it is appropriate that they should have presented the subject to this section. It is apparent that this is a life-saving drug. Such a product puts a great responsibility on the physician. Prompt and accurate diagnosis and equally prompt and accurate treatment are serious obligations. It is likely that dermatologists will be more familiar with this drug than most of their colleagues in other branches of medicine. Therefore, we have a public relations job in our communities. We ourselves must become thoroughly familiar with this drug and see that it is popularized. We have in the past few months adequately demonstrated that this is a remarkable drug, inasmuch as it works in strange hands as well as in those of the men who developed it. With it we have saved several persons at the Los Angeles County Hospital in the last few months. Will Dr. Sulzberger tell us, please, how to obtain this drug? My associates and I have been unable to get it.

DR. HERMAN ALLINGTON, Oakland, Calif.: The development and use of this drug, as is true of penicillin, antimalarial drugs, the various fractions of blood plasma and insecticides, was greatly accelerated by the recent war. The authors have summarized the data on which this investigation was based and have shown step by step how it was carried through to a successful conclusion. I have been interested in BAL ever since early in the war, when it was made available for the prophylaxis and treatment of injuries from lewisite gas. At that time, its formula and mode of action were a carefully guarded secret. We were glad to have it but somewhat skeptical of its value. It is now apparent that when given early in adequate dosage, it is effective against certain types of heavy metal poisoning. From a canvass of the opinion of a number of men who have used it, I should judge that the incidence of local reactions, some of them severe, is somewhat greater than this paper would indicate. Further study, of the same excellent quality which led to the development of BAL, will probably soon lead to the discovery of similar but even more effective and perhaps less irritating medicaments.

---

[18] Eagle.[11] Eagle and Magnuson.[17]

[19] (*a*) Sulzberger, M. B.; Baer, R. L., and Kanof, A.: 1944.* (*b*) Gold, H.; Modell, W., and Cattell, M.: 1944.* (*c*) Eagle and associates.[11c]

[20] Sulzberger, M. B.; Baer, R. L., and Kanof, A.: 1943, 1944.*

* The incomplete references refer to reports which were secret, confidential or restricted at the time of presentation. Summarizing articles on BAL will appear shortly in the unclassified medical literature. (Since the preparation of this report several of these summarizing articles have appeared in the Journal of Clinical Investigation for July 1946.)

DR. JOHN G. DOWNING, Boston: I was called in consultation at 9:45 a. m. on April 27 regarding treatment of 2 young men. Each had been given 0.6 Gm. of oxophenarsine hydrochloride in a single dose, due to a mistake in the use of a hospital ampule containing ten doses for an individual injection. I ordered immediate shock therapy, including intravenous administration of dextrose and proper sedatives. Both men had been admitted to the hospital for treatment of early syphilis. After the injection they complained of a bad taste in the mouth; within a few minutes colicky pains developed in the abdomen, with nausea, retching and vomiting, and they suffered from chills followed by headaches. Evidence of toxic hepatitis with some degree of jaundice was present in each case. There was tenderness of the liver on palpation. At 10:45 a. m. they were given 3.5 cc. intramuscularly of BAL in peanut oil. Other supportive measures were continued, such as 10 per cent dextrose solution intravenously, 300 cc. of Parenamine, 5 mg. of vitamin K and 300 mg. of ascorbic acid. BAL, 1.8 cc. intramuscularly, was given every four hours for four doses the first day and twice daily for the four succeeding days. After four days, the gastrointestinal disturbances, which also included diarrhea, ceased, and at the end of eight days both patients were asymptomatic. I have the record of the several arsenic determinations made on the urine.

DR. STEPHEN ROTHMAN, Chicago: The detoxifying effect of BAL is impressively rapid and complete. In a patient in our department, severe arsenical dermatitis cleared up within three days after BAL was given. The most fascinating aspect of this dithiol compound is that its detoxifying action is considerably more than twice that of monothiol compounds. The reason for this potentiated action is that the spatial distribution of the two sulfhydryl groups in BAL is similar to the spatial distribution of sulfhydryl groups in proteins. Thus BAL is best suited to split off the arsenic from the protein molecules in which one arsenic atom has blocked two sulfhydryl groups. Historically it might be interesting to mention that in the twenties German authors praised the detoxifying effect of injections of cutaneous extracts ("detoxin") in arsenical and heavy metal poisoning. The effect of such extracts was obviously due to their sulfhydryl content.

DR. MARION B. SULZBERGER, New York: I want to thank the gentlemen for their remarks and to say that I agree with essentially everything they have said. Dr. Rothman's explanation is close to that given by the discoverers of this compound. Thompson and Stocken actually showed that when they treated kerateine with arsenic the arsenic was bound to the dithiols, i. e., to the compounds containing two sulfhydryl groups, so that in this respect Rothman's explanation is in entire agreement with their theory and with their experiments. As to Dr. Scholtz's question: As far as I can tell, BAL is not generally available as yet. However, one can still get it I believe. It may be obtained direct from Dr. Harry Eagle, at Johns Hopkins University School of Medicine, Baltimore. He will send it air mail, I am certain, if you telegraph when you have a suitable case. Moreover, I think that the Intensive Treatment centers that participated in the cooperative program of evaluating antisyphilitic schedules are supplied with BAL and that it can be obtained from them.

NOTE.—Since the date of this discussion, a preparation of BAL for intramuscular injection has been made available by Hynson, Westcott & Dunning, Inc., of Baltimore.

Nobel Prize Winners.—A study of the recipients of the Nobel Prize in physiology and medicine and in physics and chemistry in the *U. S. Naval Medical Bulletin* shows that in the forty-five years during which the prizes have been given the youngest recipient of the prize for medicine was Sir Frederick Banting, a Canadian, the co-discoverer of insulin. He was 32. Ferdinand Brisson of France was 86 and Jane Addams of Chicago was 74 when they received the Nobel Peace Prize.

NEPHRECTOMY FOR HYPERTENSION WITH UNILATERAL RENAL DISEASE

Report of Forty-Nine Cases

RIGDON K. RATLIFF, M.D.
REED M. NESBIT, M.D.
ROBERT T. PLUMB, M.D.
and
WAIT BOHNE, M.D.
Ann Arbor, Mich.

Increased arterial blood pressure occurs in patients having a variety of diseases. Some of these diseases can be demonstrated clinically by pyelography, and because of this fact pyelography is included in the routine study of hypertensive patients in the University of Michigan Hospital. Patients with hypertension also have electrocardiographic study, eyeground examination, orthodiagraphic study and study of total renal function. When the excretory urograms are unsatisfactory for diagnosis, cystoscopy with split phenolsulfonphthalein and retrograde pyelogram is done.

During the years 1940 to 1945 inclusive, 2,055 hypertensive patients were studied in the urologic clinic (table 1). This figure represents approximately 20 per cent of the total number of pyelograms (9,501) that were made during the six year period covered by this study. Over-all, there was an incidence of renal abnormalities of 8.9 per cent. It will be noted that in 1940 and 1941 there was an incidence of 15.1 per cent, as against 5.1 per cent in 1945. This means that the interpretation of the pyelogram in the early part of the study was more critical than that in 1945 or else that the incidence of abnormality in these early years was three times what it was in 1945. It seems more probable that the critical interpretation of the pyelogram rather than the incidence has changed. During this period all the pyelograms were read by the same man. The extent of this variation in interpretation is further emphasized when we find that Schroeder and Steele in 1941 reported an incidence of about 40 per cent, as compared with our incidence of 9 per cent. For any one then to postulate, without consideration of this variable, that the incidence of renal pathologic changes in the hypertensive patient is the same as that in the average adult is not justified.

TABLE 1.—*Hypertension (Pyelograms)*

Year	Pyelograms, Total No.	Not Indicating Abnormality or Inconclusive	Indicating Abnormality No.	Indicating Abnormality %
1940 and 1941	528	448	80	15.1
1942 and 1943	680	626	54	7.9
1944	378	353	25	6.6
1945	469	445	24	5.1
Total	2,055*	1,872	183	8.9

* 21.6 per cent of total pyelograms (9,501).

Our interpretation of the pyelograms is reported in table 2. One hundred and eighty-three lesions are recorded. This table shows that hypertension may coexist with any of the common renal lesions, but there

---

From the Department of Surgery, University of Michigan Medical School.

Read before the Section on Urology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

is no consistent relationship between hypertension and any particular gross renal lesion. Congenital absence, reduplication of pelvis and bilateral lesions occurred in 70 of the patients. The remaining 113 patients had unilateral lesions. The matter of interpretation is here again important. In all categories there is a consistent incidence of lesions throughout the years of study, with the one exception of pyelonephritis. The ratio for this condition is 15.5, 15.5, 7.5, 7.5, 6 and 3. One cannot well believe that there were five times as many cases of pyelonephritis in 1940 as in 1945. It must follow then that the interpretation favored the lesion more in earlier years than now.

Of the 2,055 pyelographic studies carried out on hypertensive patients during the period from 1940 to 1945, approximately 1,350 were made solely in an effort to determine a possible renal cause for hypertension, for that number of patients had no symptoms or urinary findings which alone would have indicated the need for urologic studies. The cost of making pyelographic studies is considerable. If some means of selection could be employed so that pyelography could be eliminated from the routine examination and employed in only selected cases, then a great economy could be effected. That method, however, is not now available

As stated, only 9 per cent of all the patients studied had abnormalities, while less than 5 per cent were candidates for nephrectomy and fewer came to operation Because of our low incidence of demonstrable surgical renal defects in hypertensive patients and because some authors have expressed pessimism with regard to the result of operation in such cases, an evaluation of nephrectomy in hypertension is needed and justified.

During the eleven year period 1934 to 1945 in the records of the University Hospital 49 cases of severe hypertension treated by nephrectomy were found. In all but 7 of these the systolic pressure was well over 200 or the diastolic over 100. The follow-up record has been longer than twelve months in all but 8 of the cases.

Table 3 summarizes the results of nephrectomy in these 49 cases. Seventeen patients (34.6 per cent) were considered to have had good results, and 6 (12.4 per cent) were improved; results in 26 (53.0 per cent) were failures. A good result means that the patient was free from hypertensive symptoms and had a normal blood pressure at the time of the last follow-up report. In other words, the patient is considered cured according to clinical evidence at the date of check-up examination. Results were regarded as a failure when a patient was not improved by nephrectomy or had subsequently died a hypertensive death.

An analysis of the 49 patients shows that 17 had no symptoms of the urinary tract or abnormalities of the urine as determined by simple clinical examination. The remaining 32 had some complaint or abnormality referable to the urinary tract. It is thus evident that no simple clinical test can be used to select the patients most likely to have pyelographic abnormalities; all must be examined by urographic studies.

There were 19 cases of unilateral chronic pyelonephritis with hypertension (table 4). Eight of the patients had atrophic pyelonephritis, sometimes termed congenital hypoplasia. Inasmuch as all the patients with so-called hypoplasia in this group showed microscopic evidence of the inflammatory changes, it is questionable that these are true examples of congenitally undeveloped kidneys. It seems more probable that the lesion represents an arrest of growth due to inflammatory changes occurring in the small kidney of the infant, for the majority of the patients are known to have had infections of the urinary tract during early childhood. In some instances the infective process appears to have burned itself out during childhood, while in others the inflammatory process has been a prolonged one. This type of lesion might well be termed infantile chronic pyelonephritis, in contrast to the adult type of pyelonephritis, in which atrophic changes occur but never the dwarfed kidney that follows infections acquired during childhood. In this group, 2 of the patients remained free from hypertension following nephrectomy and 2 are improved, while 4 showed no change. The 11 patients with chronic pyelonephritis without hypoplasia fared better after nephrectomy: 5 had good results, 1 was improved and there were 5 failures. One of the cases in this group is outstanding and should be reported in its details.

TABLE 2—*Hypertension (Renal Abnormalities)*

Pathologic Changes	1940 1941	1942 1943	1944	1945
Congenital absence. ...	1 (?)	0	1	.
Hypoplasia	4	3	2	3
Nonrotation	0	1	..	.
Ptosis or ectopia	1	7	..	..
Reduplication (pelvis)	10	6	7	4
Polycystic disease	1 (?)	6	2	1
Solitary cyst	1 (?)	1	..	..
Malignant growth	2	1	..	..
Ureteral calculus	2	0	1	1
Unilateral renal calculus	12	7	3	5
Bilateral renal calculi .	1	2		..
Unilateral hydronephrosis	9	3	2	3
Bilateral hydronephrosis .	3	0	..	2
Pyonephrosis	0	1	..	
Unilateral chronic pyelonephritis	15	10	5	3
Bilateral chronic pyelonephritis	16	5	1	.
Tuberculosis	2	1	..	2
Bilateral calcification of renal vessels, with renal aneurysm on right side	..	..	1	..
Total	80	54	25	24

TABLE 3.—*Results of Nephrectomy in Hypertension (1934-1945)*

	Cases	
	No.	%
Good	17	34.6
Improved	6	12.2
Failure	26	53.0
Total.	49	

TABLE 4—*Hypertension—Results of Nephrectomy*

Pathologic Change	No.	Good	Improved	Failure
Chronic pyelonephritis (renal hypoplasia)	8	2	2	4
Chronic pyelonephritis without hypoplasia	11	5	1	5
Hydronephrosis . .	11	4	2	5
Renal tuberculosis.	4	1	..	3
Hypernephroma.	1	1	..	.
Pyonephrosis .	6	1	..	5
Pyonephrosis with calculus .	7	3	1	3
Post-traumatic healed infarct, with chronic pyelonephritis	1	..	..	1
Total	49	17	6	26

A. B, a man aged 41, was admitted to the University of Michigan Hospital on Oct. 14, 1938, complaining of hypertension with headaches for three years and shortness of breath with dyspnea on exertion for a year. He has had gross hematuria on two occasions, five months and one month prior to his admission to the hospital. Examination was essentially noncontributory except for the following factors: The blood pressure was 200 systolic and 110 diastolic; the heart was enlarged, and the eyegrounds showed hemorrhagic and exudative retinitis and mild hypertensive retinitis. The urine was normal. Excretory pyelograms showed a normal left kidney but nonvisualization on the right. Retrograde pyelograms revealed a normal left kidney and advanced changes characteristic of advanced chronic pyelonephritis on the right.

Nephrectomy on the right side was performed Nov. 11, 1938. The pathologist reported "dilation of the renal pelvis; inflammatory infiltrations beneath the pelvic mucosa; extreme sclerosis of the arterioles, and arteriosclerotic nephropathy with advanced pyohydronephrotic atrophy." The postoperative course was uneventful, and at the time of discharge from the hospital, on his fifteenth postoperative day, the blood pressure was 135 systolic and 80 diastolic.

He has been seen on numerous occasions during the eight years that have elapsed since nephrectomy, and on each occasion he has reported freedom from all hypertensive symptoms. One year following operation his blood pressure was 130 systolic and 86 diastolic, and at that time the eyegrounds were reported to be free from hemorrhages and exudates. The most recent check-up examination was made in July 1945. At that time the blood pressure was 130 systolic and 80 diastolic, the eyegrounds were normal and the patient reported that he was symptom free and working every day.

Nephrectomy was performed on 11 patients who had hydronephrosis with significant hypertension. Five of them had no permanent lowering of the blood pressure following operation, while 2 have had moderate improvement and 4 have had normal blood pressures that have persisted since operation. Two of the latter are significant in that they were known to have had normal levels of blood pressure prior to the development of advanced hydronephrosis and were followed for a time during which the development of hypertension paralleled the development of advancing hydronephrosis. In each instance nephrectomy was followed immediately by a return of the blood pressure to normal. Both of the patients were students at the University of Michigan and were followed at the University Health Service and the University Hospital during the entire cycle of the illness.

The remarkable improvement that ensued following nephrectomy in 3 of 7 patients who had calculous pyonephrosis and coincidental hypertension was as unexpected as it was gratifying. Also, 1 patient who is considered to have been improved but not cured has enjoyed a most spectacular regression of the hypertensive symptoms which had incapacitated her prior to nephrectomy.

CONCLUSION

Chronic arterial hypertension can be of renal origin. When unilateral renal disease is demonstrated by roentgenologic examination it can be treated by nephrectomy, with an expectation of improvement or cure of the associated hypertension in about half of the cases.

In the present series of cases the greatest incidence of favorable results occurred in the cases of adult chronic pyelonephritis, hydronephrosis and calculous pyonephrosis. In the group of cases termed "infantile chronic pyelonephritis" by us, the incidence of cure is definitely less than that in the adult type.

Routine urologic studies in all hypertensive patients, regardless of the high over-all cost entailed, appear to be desirable for the reason that a significant number of the patients having gross renal lesions could not otherwise be discovered.

ABSTRACT OF DISCUSSION

Dr. Alfred I. Folsom, Dallas, Texas: The interpretation of the so-called atropic or hypoplastic kidney is difficult clinically, since the pathologists themselves are divided as to whether a specimen shows true hypoplasia or true atrophy of the kidney. There are certain definite criteria which have helped me to differentiate between the hypoplastic kidney and the pyelonephritic atrophy. One is the arrangement of the calices. In the hypoplastic kidney, the ureter goes up in the pelvis and then there is a small group of calices and infundibula which run almost parallel, almost like a cluster of roses; this is totally different from the picture of pyelonephritis, in which there is the uniform distribution of the calices, of slope from the upper pole to the lower pole; in the cases of atrophy from inflammation this same arrangement of the calices is maintained, whereas the true hypoplastic kidney has this group of calices more or less bunched together, like a bunch of roses. The only constructive suggestion which I should like to make with reference to the evaluation of the kidney that may be potentially the cause of hypertension is that developed by aortography. When Gus Santos first brought out his epoch-making paper, it shook me like an earthquake. We have recovered from our first terrible shock and fear of this method, so that I have done several of these aortographic investigations myself. We are now, with reference to that subject, much like Gil Thomas and Bill Braasch and I were many years ago in interpreting pyelograms. However, I think that if a sufficient number of us get interested in it and do a large enough number, there may come out of it a much clearer interpretation than now exists. In aortography in this particular type of case we have a means of helping to determine whether this kidney should be removed, with the idea of the blood pressure being affected. This method will help pick out the patients who will be relieved by this operation; as evidenced by this frank report, only about half of them, even in 49 cases out of over 2,000 that we have investigated, were actually helped. The criterion which I think is sound is that a diminution in the caliber of the renal artery and an insufficiency of the circulation of the kidney are demonstrated. That is probably one of the soundest bases and one of the most valuable contributions that this nerve-racking procedure may contribute to this interesting subject.

Dr. William J. McMartin, Omaha: I wish to compliment Dr. Ratliff for the study of the largest number of hypertensive patients examined urologically in one institution to determine whether or not there was present unilateral renal disease acting as the generator of hypertension. Unilateral renal disease as the sole cause of hypertension is rare. In 1942, I reported with McCurdy 4 cases of hypertension, in which we were able to get good results following unilateral nephrectomy. The first patient had a blood pressure of 240 systolic and 130 diastolic. He had had a calculus removed from a kidney a number of years before. His preoperative symptoms were attacks of blindness with severe headache. We removed an atrophic, infected kidney. His blood pressure fell to 140 systolic and 90 diastolic and averaged this pressure for four years. He worked every day for three and one-half years, when a coronary attack developed and he died. The second case was that of a postmaster with a blood pressure varying from 170 systolic and 100 diastolic to 186 systolic and 110 diastolic. His complaints were attacks of abdominal distention and pain in the back. Urologic examination revealed unilateral hydronephrosis and hydroureter, with pyelonephritis. Nephrectomy was performed. The blood pressure following operation remained at 150 systolic and 90 diastolic. This patient lived for three years after the operation and died suddenly of a coronary attack. The other 2 cases were those of men in the third and fourth decades, both with malignant hypertension of over 200 systolic and with diastolic pressures varying from 100 to 140. One had pyelonephritis with early sclerotic thickening in the renal arterioles. The other patient had a more advanced pyelonephritis, with some scarring of the renal parenchyma. Nephrectomy on both of these men brought pressures to normal, and they have stayed normal for five years. Dr. Ratliff and Dr. Nesbit have found that out of 2,055 patients with hypertension 1,350 patients had no urinary findings which might indicate a need for urologic study. Out of the 1,350 cases, I hope that he will tell us how many patients showed unilateral renal disease and how many of these came to nephrectomy with successful results. The fact that only 9 per cent of these patients had abnormalities and that less than 5 per cent of these came to nephrectomy should impress all of us that though those patients are amenable to successful treatment it is a rare happening. We are finding repeatedly a note of pessimism in most of the reports, be they of a clinical, operative or experimental nature. Pessimism with regard to surgical treatment of the diseased kidney in these patients is not fully warranted, because cure or improvement may be expected in 50 per cent of these patients able to come to operation.

DR. RIGDON K. RATLIFF, Ann Arbor, Mich.: We have had no experience with the aortogram in the differential diagnosis of pyelonephritis. As to the final disposition of the 2,055 hypertensive patients studied by pyelography, it was pointed out that less than 5 per cent were candidates for nephrectomy and fewer than this percentage came to operation. Those who did come to operation are included in the series of 49 cases, details of which are presented in the paper. It is obvious in this survey that the higher percentage of cures falls in that group of patients who have gross urologic symptoms. Fewer good results followed nephrectomy in the group of hypertensive patients who had no urinary symptoms.

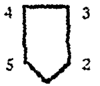
USE OF 5-NITRO-2-FURALDEHYDE SEMICARBAZONE IN DERMATOLOGY

JOHN GODWIN DOWNING, M.D.
MILLARD C. HANSON, M.D.
and
MARION LAMB
Boston

In a search for an effective agent against both gram-positive and gram-negative pathogenic bacteria invading the skin, the possible value of a nitrofuran was brought to our attention, namely, that of Furacin Soluble Dressing.

NITROFURANS

Chemistry.—The furans are chemicals obtained for the most part from oat hulls. Furfural, the fundamental member of the furan series for the synthesis of other derivatives, results from the dehydration of sugars of five carbon atoms, known as pentoses, present in the natural product. The furans are five-membered heterocyclic ring compounds of this type of formula and numbering systems:



The stability of furan derivatives varies depending on the substitutes present in these numbered positions. Many simple furans are sensitive to acid but stable to alkali. The introduction of a group in the 5 position produces a compound with more stability in respect to acid mediums but diminished stability in respect to alkaline environment. Much work has been done and interest displayed in furan chemistry, but in spite of this there is much fundamental work to be done to further the chemical knowledge of these compounds. Therapeutic applications of furan compounds have been extremely limited.

Bacteriostatic Action.—The in vitro bacteriostatic and bactericidal action of furan derivatives was shown by Dodd and Stillman to depend on the presence of a nitro group in the 5 position.[1] Antibacterial activity was exhibited by the 5-nitro derivatives of a series of simple furan derivatives. This activity extended to a variety of gram-positive and gram-negative bacteria.

The proved antibacterial properties of the nitrofurans, demonstrated in vitro, suggested their possible use in the treatment of wounds. Among others, 5-nitro-2-furaldehyde semicarbazone (Furacin) was found to be nonirritant and nontoxic on local application and to exhibit no adverse effect on the healing of experimental wounds. Because of its antibacterial properties, it was suggested for clinical trial. Subsequently, Meleney, Johnson, Pulaski and Colonna called attention to the desirability of further study of this particular nitrofuran because of its action against gram-negative bacteria.[2]

Furacin (5-nitro-2-furaldehyde semicarbazone) is a lemon yellow crystalline compound having a slight solubility in water (1:4,200) and more solubility in compounds of the glycol type—propylene glycol (1:300) and Carbowax 1500 (1:100). It is heat stable at an autoclave temperature of 120 C. but decomposes at temperatures above 227 C. Exposure to light causes some discoloration. It is effective as an antibacterial agent in the presence of blood and serum. In a study of the mechanism of action of nitrofurans against bacteria, Dodd and Cramer found that 5-nitro-2-furaldehyde semicarbazone, depending on concentration, could prolong the lag phase of bacterial action or, at higher concentrations, exert bactericidal action.[3]

Furacin Soluble Dressing is a 1:500 solution of 5-nitro-2-furaldehyde semicarbazone (Furacin) in a water-soluble vehicle containing Carbowax 1500 and propylene glycol. This preparation was employed in the treatment of infected war wounds in a preliminary study by Snyder, Kiehn and Christopherson.[4] Clinical improvement was correlated with reduction in the bacterial flora. Early deodorization and a clean appearance were observed. Further clinical studies are in progress and will appear in the literature.

Toxicity.—The toxic effects of 5-nitro-2-furaldehyde semicarbazone have been studied in mice, rats, monkeys and human beings. The oral lethal dose of 50 per cent of mice treated (LD_{50}) was found to be 0.58 Gm. per kilogram. For rats, the oral lethal dose of 50 per cent is 0.59 Gm. per kilogram when given orally and 3 Gm. per kilogram when given subcutaneously. Monkeys fed 0.3 Gm. daily for five weeks showed no effects on body weight, electroencephalogram, blood cell counts, renal and hepatic histology or electrocardiogram. Finally, 10 human subjects have ingested this compound, some in doses of 4 Gm. daily for three days and others in doses of 1 Gm. daily for forty-nine days. Nausea was the only reaction observed and occurred in about 20 per cent of patients; of these patients, 8 per cent continued to react by vomiting. One decided sensitization reaction was observed on oral administration of the drug to a patient who had previously received local treatment with 5-nitro-2-furaldehyde semicarbazone dressing for a prolonged period.

Irritant and Sensitizing Properties.—The irritant and sensitizing properties of the dressing and the soluble

---

Aided by a grant from the Eaton Laboratories, Inc.

Dr. F. Parker Jr. gave suggestions and Dr. Sydney J. Allman, Miss A. K. Daly and Miss Theresa Kelley rendered technical assistance.

From the Department of Dermatology and Bacteriology, Boston City Hospital, and the Department of Dermatology, Tufts College Medical School.

Read before the Section on Dermatology and Syphilology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 5, 1946.

[1] Dodd, M. C., and Stillman, W. B.: The In Vitro Bacteriostatic Action of Some Simple Furan Derivatives, J. Pharmacol. & Exper. Therap. **82**: 11-18 (Sept.) 1944.

[2] Meleney, F. L.; Johnson, B. A.; Pulaski, E. J., and Colonna, F.: The Treatment of Mixed Infections with Penicillin, J. A. M. A. **130**: 121-124 (Jan. 19) 1946.

[3] Dodd, M. C., and Cramer, D. L.: Personal communication to the authors.

[4] Snyder, M. L.; Kiehn, C. L., and Christopherson, M. W.: Effectiveness of a Nitrofuran in the Treatment of Infected Wounds, Mil. Surgeon **97**: 380-384 (Nov.) 1945.

base were studied by patch testing. Two hundred normal persons were patch tested for irritant properties, and ten days later 50 of them were retested for sensitizing properties. The test substances were applied to the skin for forty-eight hours, and the reactions were noted at twenty-four, forty-eight, seventy-two and one hundred and twenty hour intervals. The substances were applied under a 1 inch (2.5 cm.) square piece of cotton fabric, which was covered with oil silk and secured by adhesive tape.

In no instance was there a reaction characterized by erythema with edema, vesiculation or ulceration. The first application of the dressing resulted in erythema reactions (1 plus) in 1.5 per cent of the subjects in twenty-four hours, in 5.5 per cent in forty-eight hours, in 1.5 per cent in seventy-two hours and in no subjects in one hundred and twenty hours. Reactions to the soluble base test occurred in 0.5 per cent at twenty-four hours, in 3.0 per cent at forty-eight hours and in none at seventy-two and one hundred and twenty hours. The second twenty-four hour application resulted in 4.0 per cent reactions in forty-eight hours to the dressing and in 2.0 per cent to the soluble base in the same period.

Table 1.—*Comparative Results in Diseases Treated*

Condition	Brilliant	Good	Questionable	No Effect	No Follow up	Total
Group I. Diseases due to infection with lower organisms						
Cellulitis	..	1	..	..	..	1
Infectious eczematoid dermatitis	6	14	1	5	14	40
Ecthyma	..	9	1	2	4	16
Impetigo contagiosa	..	20	3	3	14	40
Sycosis vulgaris	..	2	1	..	1	4
Furuncle	..	3	..	..	1	4
Folliculitis	..	.	.	2	1	3
Erythema induratum	..		2		..	2
Granuloma inguinale	.	.	.	2		2
Group II. Diseases due to higher plant or animal parasites						
Dermatophytosis			.	4	1	5
Infection from insect bite		3	..	..	..	3
Group III. Disease due to intoxication						
Occupational dermatitis			.	9	..	9
Group IV. Diseases due to trauma or physical agents						
Ulcer:						
Traumatic	4	9		1	..	14
Decubitus	.	2	1	..	..	3
Postoperative	4	2	..	..	..	6
Infection from first degree burn	..	1	..	..	..	1
Group V Disease due to circulatory disturbance						
Ulcer hypostaticum	4	14	2	5	4	29
Group VI. Disease due to metabolism						
Acne vulgaris	..		3	2	1	6
Diabetic ulcer	.	2	1	.	..	3
Group VII. Diseases due to uncertain causes with structural reaction alone manifest—						
Neurodermatitis	.	..		4	2	6
Psoriasis	..	..	.	7	1	8
Nummular eczema	..	.	.	2	..	2
		..		1		1
	.	.	..	2	1	3
	.	.		1	.	1
Totals	18	82	15	52	45	212

Photosensitization was not observed. Three subjects were given erythema doses of ultraviolet radiation over the soluble dressing without reactions. The discoloration occurring when the compound was exposed to sunlight apparently did not affect its value. There was no staining of the skin.

DISEASES TREATED AND RESULTS

Two hundred and twelve patients were placed under treatment. The diseases treated have been grouped in conformity with the 1942 "Standard Nomenclature" of the American Medical Association (table 1). In evaluation of the clinical response to the dressing, Meleney's classification has been adopted, the results being divided into four groups: brilliant, good, questionable and no effect.[5] According to Meleney, the usefulness of a therapeutic agent without controls cannot be proved unless the majority of results are either brilliant or good.

Group 1.—Infectious Eczematoid Dermatitis: This group included the infectious eczematoid dermatitis of the legs described by Engman,[6] that of the hands described by Lane and associates,[7] streptococcic dermatitis of the ear described by Mitchell,[8] secondarily infected eczematoid dermatitides surrounding ulcers and dermatophytosis. Of 26 cases remaining under observation, the results were brilliant in 6, good in 14 and questionable or nil in the rest. The longest period of treatment of healed patients was eighteen days and the shortest four days, with an average of 8.6 days. Treatment consisted in application of the dressing twice daily. In the cases of favorable results, the weeping and crusting diminished strikingly in twenty-four to forty-eight hours, with abatement of burning and itching. Temporary irritation was noted in 2 of the 5 patients not responding to treatment.

Ecthyma: Of the 12 cases of ecthyma remaining under observation, the therapeutic response was good in 9 cases and questionable or nil in 3. Four applications were made daily. In 3 cases 5 per cent ammoniated mercury ointment was used for comparison; the response to the two agents was equally good.

Impetigo Contagiosa: Forty patients with this disease were treated, with 26 remaining under observation. Applications were made four times daily, without covering except when necessary to protect the clothing. The result was classified as good if the lesions were healed on the patient's return to the clinic after one week of treatment. This response was obtained in 20 cases; the results were questionable in 3 cases and nil in 3. It was found that a light covering, such as a handkerchief, secured over the face eliminated the dark brown discoloration of the dressing caused by exposure to light and kept the solution in the proper place.

Case 1.—J. C., a 53 year old man, was first seen on Dec. 14, 1945 Fifteen days previously he had noted a small sore on the left side of his face This was diagnosed by an attending physician as impetigo. Treatment at that time produced an irritation Subsequent application of penicillin ointment resulted in a severe eczematoid reaction, with pronounced weeping and crusting over the left side of the face and neck. Burning and itching were severe. Treatment with 5-nitro-2-furaldehyde semicarbazone dressing applied twice daily was initiated. The following morning the patient reported that he had his first night's sleep in two weeks; the weeping had ceased, and the crusting had diminished. On the fifth day the patient's condition was decidedly improved, and in eight days the face was healed

This case illustrates the value of an additional therapeutic agent (fig. 1).

Sycosis Vulgaris: Only 3 patients with sycosis vulgaris were treated. The result was good but temporary in 2 and questionable in 1.

The number of cases in the rest of group 1 is too small to permit of the drawing of conclusions.

---

[5] Meleney, F. L: The Difficulty of Evaluating Drug Treatment in Surgical Infections, J. A. M. A. **124:** 1021-1024 (April 8) 1944.

[6] Engman, M. F. An Infectious Form of an Eczematoid Dermatitis, Am. Med. **4:** 769 773 (Nov. 15) 1902.

[7] Lane, C. G; Rockwood, E M.; Sawyer, C S, and Blank, I H.: Dermatoses of the Hands, J. A. M. A. **128:** 987 993 (Aug. 4) 1945.

[8] Mitchell, J. H Streptococcic Dermatoses of the Ears, J. A. M. A **108:** 361-365 (Jan 30) 1937.

Group 2.—Dermatophytosis: Five patients with dermatophytosis with secondary infection were treated. In 2 the secondary infection was relieved, but the fungous infection persisted in all cases.

Group 3.—Dermatitis Venenata: There were 9 cases of dermatitis venenata with secondary infection. All the patients showed rapid improvement of the secondary infection, but later the underlying dermatitis became irritated.

Group 4.—Ulcers: Twenty-four patients with ulcer—traumatic, postoperative or decubitus—were treated. The majority of responses were brilliant or good. One of the postoperative ulcers developed after a Linton flap operation for vascular disturbance in a lower extremity. The ulcer, which extended along the entire incision, was 5.0 cm. in width, with an uneven base and irregular edges, and was discharging profusely. The bacterial flora included Staphylococcus aureus, Streptococcus haemolyticus and Pseudomonas aeruginosa. The distinct odor disappeared in forty-eight hours, and the discharge was controlled in seventy-two hours. The second postoperative ulcer, which was 6 cm. in diameter, showed a nearly pure culture of Ps. aeruginosa. It had been unresponsive to gentian violet medicinal, dilute acetic acid and chlorine preparations. The response to 5-nitro-2-furaldehyde semicarbazone dressing was prompt, and the cultures were sterile on the fifth day.

Three patients were treated for decubitus ulcer. Their underlying medical problems were subacute bacterial endocarditis, diabetes mellitus and malignant growth of the gastrointestinal tract. The patient with subacute bacterial endocarditis had an ulcer over the sacrum 8 cm. wide, with a deep crater, uneven base and irregular edges. The dressing was applied twice daily. Even though the patient's general condition was poor, the ulcer promptly became clean and was epithelized in twenty-two days. The patient died on the twenty-fourth hospital day. Autopsy showed no evidence of toxic effects of the dressing. The ulcers of the diabetic patient were extensive, involving large areas over the sacral and lumbar areas, and extended to the flanks. There was also a large abscess in the right popliteal space. The ulcers were dressed twice daily, and 60 Gm. of the dressing was injected into the abscess once daily for seventeen days. The patient died of diabetes on the seventieth hospital day. The dressing controlled the odor and caused a diminution in the discharge. There was no evidence of irritation of the tissues. Autopsy revealed no findings suggestive of toxicity of the dressing. There was no follow-up on the third case.

Group 5.—Group 5 was wholly composed of cases of hypostatic ulcer, of which there were 29, with 25 patients remaining under observation. The response was brilliant in 4 cases and good in 14. Three patients were hospitalized with rest in bed; the rest were ambulatory. No supportive measures such as elastic bandaging or stockings were used. Two patients were operated on for improvement of circulatory disturbances after ulcer infection had been controlled. The longest period of treatment was one hundred and twenty-nine days and the shortest forty days. In all cases the odor and discharge disappeared within from two to seven days. Occasionally a patient complained of a mild burning on application of the dressing, but this lasted for only a few minutes and was not intense enough to warrant discontinuance of the treatment. In 3 cases in which the dressing controlled the infection preparatory to skin grafting, it was also used after grafting. The percentage of takes was comparable to that with other accepted methods. There was no evidence of interference with epithelization or granulation.

The following cases illustrate the correlation of bacteriologic and clinical findings:

Case 2.—A. K., a 47 year old woman, was treated in the hospital during February 1945, with elevation, compresses and diverse topical applications, without favorable response. On readmission on Oct. 15, 1945, the ulcers had enlarged, despite treatment in the dispensary, and involved one fourth of the anterior and lateral aspects of the lower part of the left leg. There was a profuse discharge. Cultures grew Staph. aureus, Str. haemolyticus and Ps. aeruginosa. A Hinton test of the blood elicited a negative reaction. Use of the dressing resulted in rapid control of the discharge, and the ulcers showed a clean granulating surface. On December 10 a Linton flap operation for improvement of circulation was performed, and the dressing was employed postoperatively. On Feb. 26, 1946, the patient was discharged with the ulcers healed except for an area measuring 0.8 cm. in width, which was reported healed two weeks later. The length of treatment was one hundred and twenty-nine days. There was no interference with granulation or epithelization. Although extensive denuded areas were dressed over a long period, there was no evidence of toxic effects from absorption (fig. 2).

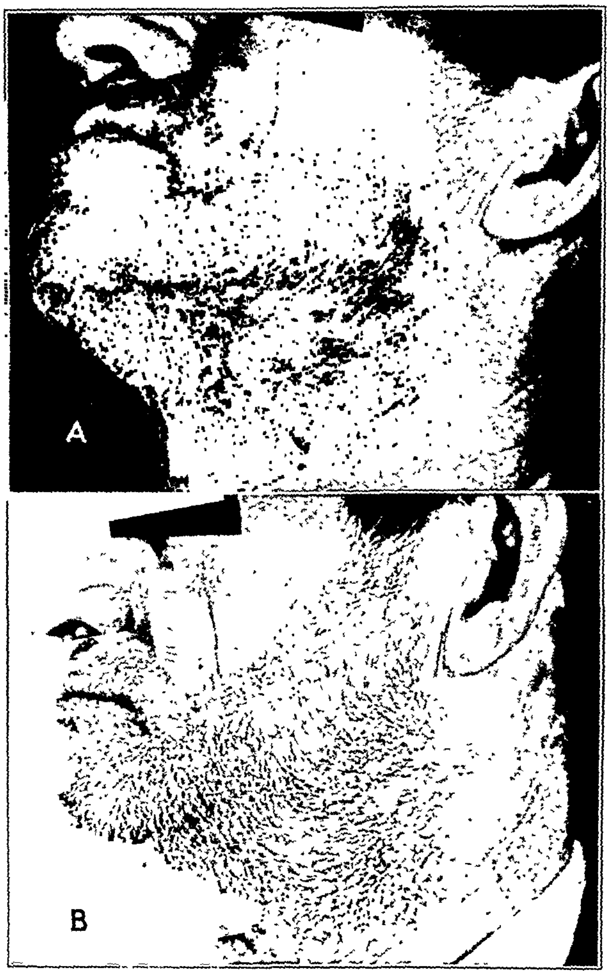


Fig. 1 (case 1).—*A*, severe pustular and eczematoid dermatitis in J. C. following treatment of impetigo with penicillin ointment. *B*, appearance five days later, after use of Furacin Soluble Dressing.

Case 3.—J. N., a 65 year old man, was referred by the Surgical Clinic with a treatment-resistant hypostatic ulcer and eczema of the right leg of four months' duration. The ulcer measured 1.5 cm. in its greatest width, the edges were sharply demarcated and there was a slight discharge. A Hinton test of the blood elicited a negative reaction Daily applications of the dressing were made, and the leg was healed forty-two days later. The bacterial flora included Staph aureus, Staphylococcus albus, Str haemolyticus, diphtheroids and enterococci Cultures showed the strains to be sterile in four, eight, four, eight and one days respectively.

Group 6.—Acne Vulgaris: Of the 5 cases of acne vulgaris remaining under observation, the response was questionable in 3 cases and nil in 2. No irritation was observed.

Diabetic Ulcer: Three patients with diabetic ulcer were treated. The results were good in 2 cases and questionable in 1. There was no irritation.

Group 7.—The patients in this group were treated in some instances for control of secondary infection and in others, such as pemphigus, to ascertain the effectiveness of the dressing. The underlying conditions were not favorably affected. In 3 cases of psoriasis a definite local irritation resulted, which receded promptly on discontinuance of the treatment. The same phenomenon occurred in 2 cases of nummular eczema.

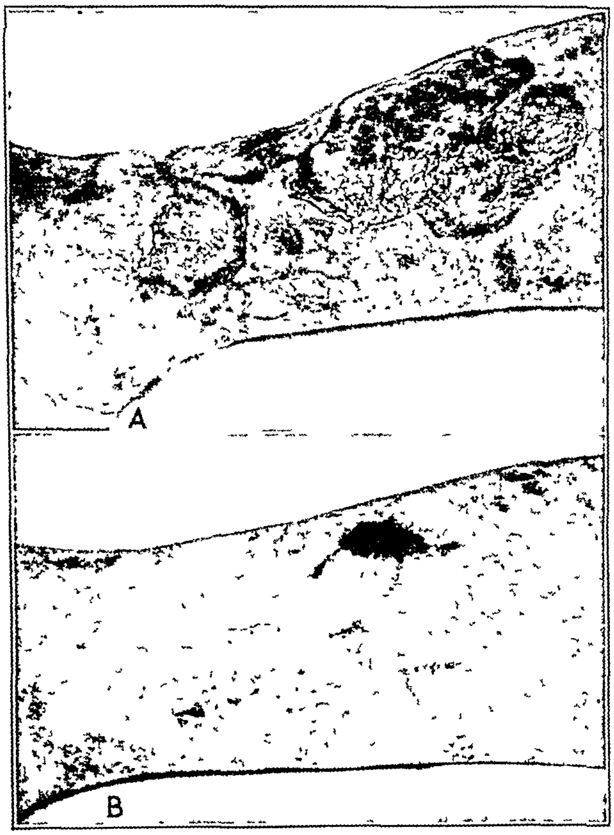


Fig. 2 (case 2) —*A*, ulceration of A K treated with Furacin Soluble Dressing from Oct 5, 1945 to Dec 10, 1945. A Linton flap operation was performed, and dressing was used postoperatively. *B*, result on discharge from hospital, Feb 26, 1946

BACTERIOLOGY

Cultural studies of the bacterial flora were made in 29 cases. As shown in table 2, eighty-seven strains of sixteen species of organisms were isolated. The gram-positive organisms Staph. aureus, Staph. albus, Str. haemolyticus, Corynebacterium diphtheriae and diphtheroids represent 81.6 per cent of the total cultures. Of the gram-negative organisms, Proteus vulgaris and Ps. aeruginosa were the most frequent. Only two strains of Escherichia coli were noted.

All specimens were cultured aerobically and anaerobically. All were plated in a uniform manner, and rough estimates of the number of colonies were made. The symbol 4 + indicates a heavy confluent growth, 3 + a heavy but not confluent growth, 2 + moderate growth and 1 + scant growth. Cultures were not considered reduced unless there was an appreciable reduction in the number of colonies, that is, from 4 + to 2 + or less or from 3 + to 1 +.

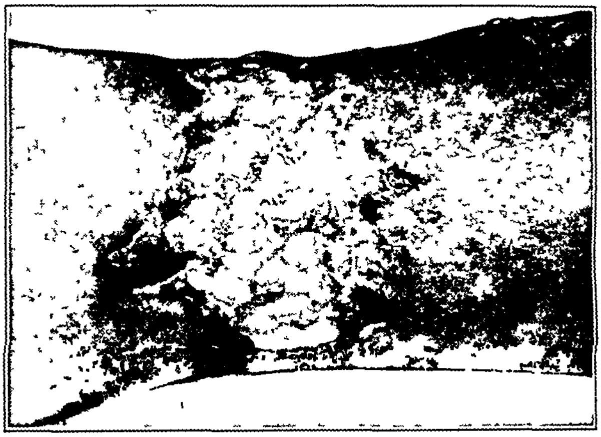


Fig 3 (case 3) —Successful pinpoint graft in which Furacin Soluble Dressing was used for the treatment of ulcer and subsequent dressing of graft.

Subcultures were made at the time of planting in order to eliminate the possibility of bacteriostatic action of any of the drug carried from the dressing.

Virulence tests were done on all C. diphtheriae. One was found to be virulent. The coagulase test was done on all staphylococcus cultures (table 2).[9]

The number of gram-negative organisms recovered from the cases included in this study was surprisingly small. In only 7 of the cases did we feel that the gram-negative organisms present were significant. In the 2 cases in which Esch. coli was present, 1 a case of decubitus ulcer, there was a heavy growth of P. vulgaris plus Klebsiella pneumoniae type B and Escherichia communior, all of which disappeared in three days. The other strain of Esch. coli was cultured from a traumatic ulcer which originally showed Str. haemolyticus and Staph. aureus. The Staph. aureus disappeared in two days, but Str. haemolyticus remained throughout. As the Esch. coli recovered in this case appeared in only

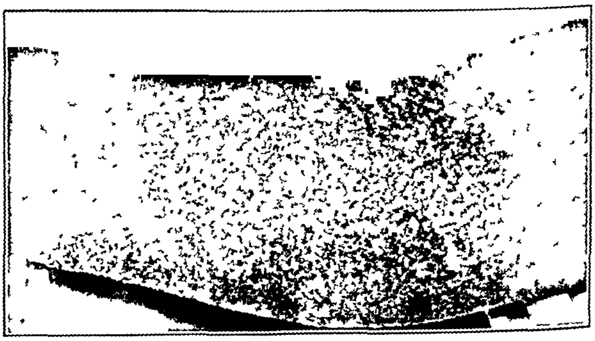


Fig. 4 (case 4) —Patch test reaction to soluble base on patient (E M.) who had used Furacin Soluble Dressing for treatment of persistent ulcer from Oct. 17, 1945 to Feb 7, 1946, at which time he suffered an intense sensitization dermatitis of the legs There was a positive reaction to the compound also demarcated and there was a slight discharge. A Hinton test of the blood elicited a negative reaction Daily applications of the dressing were made, and the leg was healed forty-two days later. The bacterial flora included Staph aureus, Staphylococcus albus, Str haemolyticus, diphtheroids and enterococci Cultures showed the strains to be sterile in four, eight, four, eight and one days respectively.

---

[9] *Tabulated according to E R. Shipley, M. C. Dodd (unpublished report)*

Group 6.—Acne Vulgaris: Of the 5 cases of acne vulgaris remaining under observation, the response was questionable in 3 cases and nil in 2. No irritation was observed.

Diabetic Ulcer: Three patients with diabetic ulcer were treated. The results were good in 2 cases and questionable in 1. There was no irritation.

Group 7.—The patients in this group were treated in some instances for control of secondary infection and in others, such as pemphigus, to ascertain the effectiveness of the dressing. The underlying conditions were not favorably affected. In 3 cases of psoriasis a definite local irritation resulted, which receded promptly on discontinuance of the treatment. The same phenomenon occurred in 2 cases of nummular eczema.

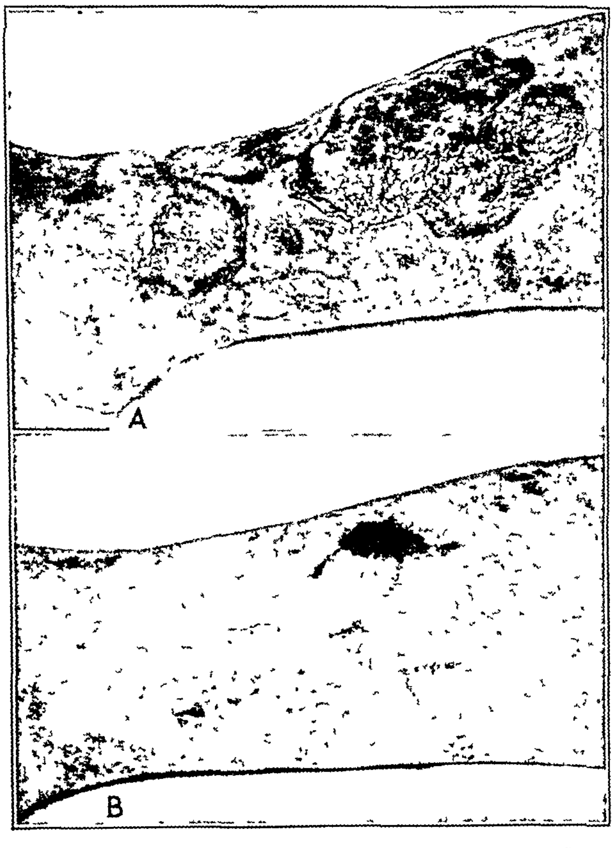


Fig. 2 (case 2) —*A*, ulceration of A K treated with Furacin Soluble Dressing from Oct 5, 1945 to Dec 10, 1945. A Linton flap operation was performed, and dressing was used postoperatively. *B*, result on discharge from hospital, Feb 26, 1946

BACTERIOLOGY

Cultural studies of the bacterial flora were made in 29 cases. As shown in table 2, eighty-seven strains of sixteen species of organisms were isolated. The gram-positive organisms Staph. aureus, Staph. albus, Str. haemolyticus, Corynebacterium diphtheriae and diphtheroids represent 81.6 per cent of the total cultures. Of the gram-negative organisms, Proteus vulgaris and Ps. aeruginosa were the most frequent. Only two strains of Escherichia coli were noted.

All specimens were cultured aerobically and anaerobically. All were plated in a uniform manner, and rough estimates of the number of colonies were made. The symbol 4 + indicates a heavy confluent growth, 3 + a heavy but not confluent growth, 2 + moderate growth and 1 + scant growth. Cultures were not considered reduced unless there was an appreciable reduction in the number of colonies, that is, from 4 + to 2 + or less or from 3 + to 1 +.

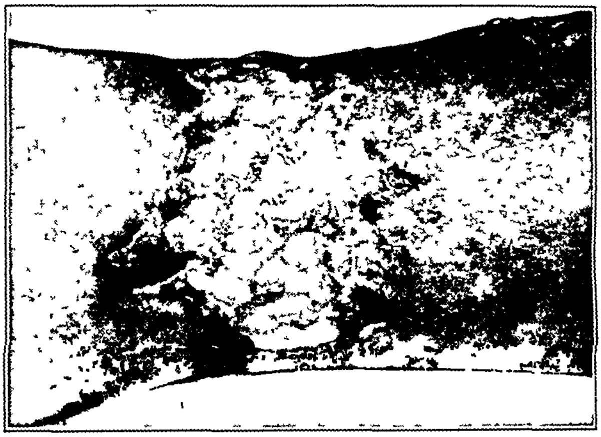


Fig 3 (case 3) —Successful pinpoint graft in which Furacin Soluble Dressing was used for the treatment of ulcer and subsequent dressing of graft.

Subcultures were made at the time of planting in order to eliminate the possibility of bacteriostatic action of any of the drug carried from the dressing.

Virulence tests were done on all C. diphtheriae. One was found to be virulent. The coagulase test was done on all staphylococcus cultures (table 2).[9]

The number of gram-negative organisms recovered from the cases included in this study was surprisingly small. In only 7 of the cases did we feel that the gram-negative organisms present were significant. In the 2 cases in which Esch. coli was present, 1 a case of decubitus ulcer, there was a heavy growth of P. vulgaris plus Klebsiella pneumoniae type B and Escherichia communior, all of which disappeared in three days. The other strain of Esch. coli was cultured from a traumatic ulcer which originally showed Str. haemolyticus and Staph. aureus. The Staph. aureus disappeared in two days, but Str. haemolyticus remained throughout. As the Esch. coli recovered in this case appeared in only

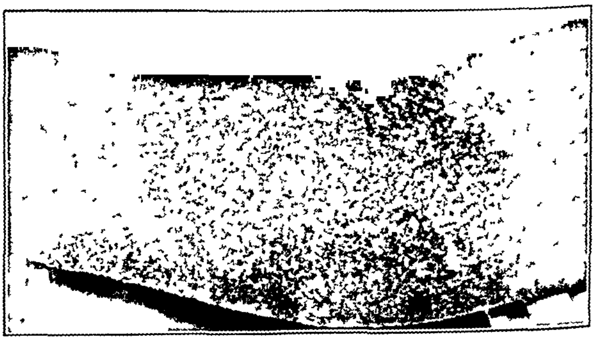


Fig. 4 (case 4) —Patch test reaction to soluble base on patient (E M.) who had used Furacin Soluble Dressing for treatment of persistent ulcer from Oct. 17, 1945 to Feb 7, 1946, at which time he suffered an intense sensitization dermatitis of the legs There was a positive reaction to the compound also

---

[9] *Tabulated according to E R. Shipley, M. C. Dodd (unpublished report)*

COMMENT

Furacin (5-nitro-2-furaldehyde semicarbazone) appears to be a useful addition to the armamentarium of therapeutic agents, and further studies with it should be done. Its efficacy in the control of gram-negative as well as gram-positive organisms makes it particularly useful in the treatment of ulcers.

Three deaths occurred in patients who had been treated with this dressing Autopsy of the first 2 patients failed to reveal any findings suggestive of toxicity from absorption, even when the drug was used in large amounts over extended periods. The underlying cause of death in these cases was diabetes millitus in the first and subacute bacterial endocarditis in the second. The cause of death in the third case (in which autopsy was not done) was cerebrovascular accident.

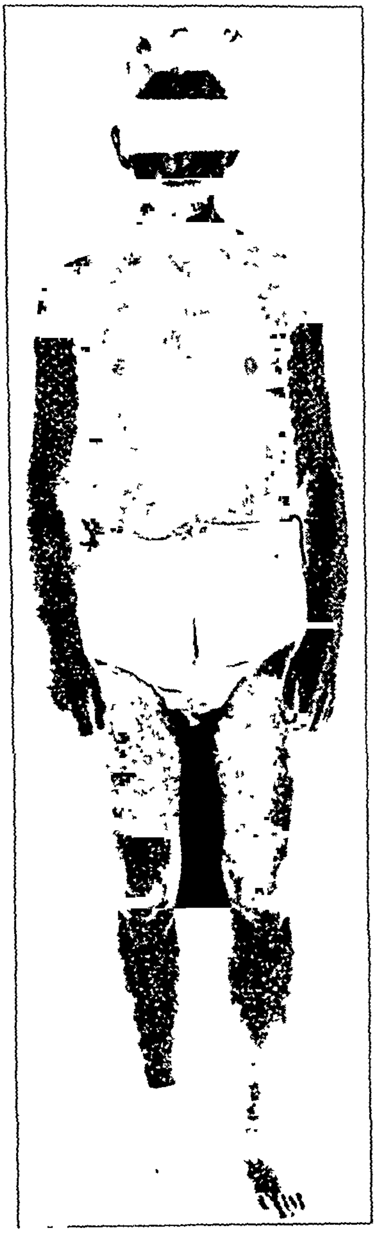


Fig 5 (case 5).— Local and generalized sensitization occurring in F K. on the twenty ninth day after the use of Furacin Soluble Dressing on ulcer and eczematoid dermatitis of the ankle.

It has been our opinion that a great discrepancy exists in this study, owing to the fact that control studies could not be made on absorption from the tissues because of the unavailability of methods for such determinations. Methods for this purpose should be developed in order to gain definite knowledge of possible toxicity from the continued use of this compound in large quantities.

Experience with different lots of 5-nitro-2-furaldehyde semicarbazone dressing indicates an imperative need for stabilization of the preparation per se and suggests the need of further studies with the soluble base in order to provide a stable vehicle. The property that the soluble base possesses of liquefying at low temperatures assures its reaching all parts of the affected area and makes possible the injection of it into abscesses and sinuses. On the other hand, the fact that the dressing liquefies at body temperature makes its control difficult. Further studies should be made for the purpose of developing a base with a higher melting point, a desirable property in the treatment of the type of patients that are covered in this report.

As regards the study of the irritant and sensitizing properties of this compound, a point made by Underwood and Gaul deserves consideration.[10] They have drawn attention to an important point in the discrepancies that sometimes occur between the reactions resulting from patch testing normal persons with a cutaneous drug and those resulting from its clinical use.

As regards testing cutaneous drugs on normal skin, we agree with Underwood and associates that the present methods of testing are of little value, a fact that we discovered in the latter part of our clinical studies. These writers expressed the opinion that a cutaneous drug may be safe for a normal skin but not for a damaged one. In stressing the need for defining methods of testing cutaneous drugs, they wrote as follows:

> Letters arrive weekly from manufacturers stating that their product was tested by an eminent authority and found safe. This is true for the normal skin, whose protective barriers (the p_H, the lipoid coating, the horny mantle) withstood the twenty or forty-eight hour contact; but what about a week or two week contact and, crucially important, the effects of the product on a skin shorn of its protective mantles or eczematized? The product in contact with living epidermal cells, nerve corpuscles and the cutis can be violently toxic, yet harmless when outside the cutaneous protective barriers The history of this or that remedy helping for a few days, followed by a sudden flare-up, has been consistently noted

The introduction of a new drug is a hazardous undertaking for the clinician. First of all, he has no control over the advertising and detailing of the product. Second, he has no assurance that the compound that he tests will be the same six months later, an assumption which is being investigated in the case of the product under discussion. There were practically no reactions until January 1946, when reactions began to appear, not only in our own patients but, as we were informed, in patients treated by the drug purchased in the open market. Last, despite the fact that the clinician recognizes the limitations of the drug and stresses its indications and contraindications, these warnings are likely to be disregarded by the medical profession and the laity, and what relieves one cutaneous disturbance will be used in the treatment of an eruption because it resembles the previous one. The establishment of the Therapeutic Trials Committee for the purpose of adequate and critical investigation of therapeutic properties and the safety of new agents will relieve the clinician of this responsibility.[11]

SUMMARY

1. Two hundred normal volunteers were patch tested with 5-nitro-2-furaldehyde semicarbazone and its soluble base, with results that would indicate little or no sensitization of normal skin.

2. Two hundred and twelve patients have been treated with this compound in a soluble base.

3. The drug does not interfere with granulation or epithelization of ulcers.

4. There is no clinical evidence of toxicity from absorption of the drug when it is used in large amounts over long periods.

5. Studies of cultures showed a high percentage of control of gram-positive and gram-negative strains by the drug.

---

[10] Underwood, G. B; Gaul, L. E; Collins, E, and Mosby, M: Overtreatment Dermatitis of the Feet, J. A. M. A **130**: *249 256 (Feb 2)* 1946.

[11] The Therapeutic Trials Committee, Report of the Council on Pharmacy and Chemistry, J. A M. A. **131**: *596 597 (June 15) 1946*

6. The drug has value in the treatment of superficial infectious eczematoid dermatitides but must be used carefully, owing to the danger of producing sensitization.

7. Although the drug is capable of sensitizing abnormal skins, in our experience to date this tendency is less than that of sulfathiazole or penicillin when used for topical application. However, in inexperienced hands the percentage of reactions may be greatly increased if the drug is used in subjects affected by mycotic infection or by industrial chemicals.

8. The drug shows excellent possibilities in the treatment of superficial infection of the skin, such as impetigo and ecthyma.

9. According to Meleney's classification, this drug has been found to be of value in the treatment of cutaneous diseases due to infection with lower organisms and ulcers resistant because of secondary infection. No therapeutic value has been demonstrated in fungous infections, industrial dermatoses, acne vulgaris and other miscellaneous dermatoses, such as psoriasis and pemphigus.

ABSTRACT OF DISCUSSION

DR. J. GARDNER HOPKINS, New York: Evaluation of an agent for local antiseptic action demands that it be effective and also harmless. Often the opinion of a careful observer on these points is, I believe, of more value than statistics. I give great weight to Dr. Downing's opinion as to this compound, which he has studied carefully, but I can only discuss his evidence, which as to harmlessness is admittedly confused. If these severe and generalized reactions occurred only in patients who were previously eczematized, then the drug may be useful in other groups of patients. If these reactions were due to a defective lot of material, they may be prevented by improved manufacture. If they are unavoidable, then occurrence in 3 per cent of cases would make the general use of this antiseptic inadvisable. As to effectiveness, if it is effective, it presumably acts as an antibacterial agent, and that should be most evident in primary infections. The recovery of 80 per cent of patients with impetigo in one week is good but hardly better than one would expect in a number of other agents. The authors lay particular stress on the good results obtained in infectious eczematoid dermatitis and various ulcers, but in these conditions the underlying cause, the concomitant treatment with dressings, rest or other measures play so large a role that it is difficult to tell how much applied antiseptic had to do with the results. If benefits in these ulcers were due to antiseptic action, one would have expected them to be more evident in primary infections. There is another possibility that the effect of this drug on gram-negative organisms is important, but it must be remembered that the pathogenicity of the gram-negative strains is not known. At least in treating secondary infections in dermatophytosis we found that if one controlled the staphylococci and streptococci with penicillin the gram-negative organisms, even Ps. aeruginosa, would disappear. It is evident that this nitrofuran is good, but how good? I should like to say something that is rather obvious, and I hope that it will be regarded as a criticism of myself and not of Dr. Downing. My associates and I recently tried to evaluate the topical value of penicillin in a hurry. Some opinion had to be given promptly, and we omitted controls. When we were all through we knew that penicillin was good, but we had no way of estimating how good. The clinical evaluation of any therapeutic measure is most difficult and time consuming. The addition of controls makes it more difficult and more time consuming, but without controls it is just hopeless. Occasionally one can treat one lesion with one procedure and another with another in the same patient. Occasionally we can tell something by using different measures in sequence, but as a rule one needs two parallel series of unselected cases, one treated by the drug under investigation and the other by some standard procedure. Otherwise, when the work is finished, there is no answer to the problem.

DR. FRANCIS W. LYNCH, St. Paul: The work of the authors and the experimental studies of others show that this drug has superior features. It is effective in high dilution, in the presence of organic materials and against many organisms, gram-negative as well as gram-positive. It does not interfere with healing tissues. It is incorporated in a highly satisfactory base. Unfortunately, there are deficiencies in our knowledge. No unbiased study of minimal bactericidal concentrations has yet been published, and it will be interesting to see the comparison with the other agents recommended by Meleney's group. Also, the role of Furacin as a sensitizer is still to be determined. Experience with the sulfonamide drugs and penicillin makes one suspicious that prolonged and repeated clinical use may lead to unfortunate experiences. Shipley reported that cutaneous irritation was observed in "only 2" of the first 100 patients, but this figure does not allow a conclusion that the drug may not cause considerable trouble. While my experience with the drug has been less extensive and critical than that of the authors, I am in general agreement with their conclusions. I used Furacin Soluble Dressing in 80 cases. The results in 8 cases of impetigo and 2 of ecthyma were as good as those with sulfathiazole or penicillin. In folliculitis I was more fortunate than Downing, but in sycosis I was disappointed. Incorporation in a more penetrating base may help in these diseases. In secondarily infected dermatitis the preparation was beneficial, but uncomplicated mycotic dermatitis, neurodermatitis and psoriasis were not helped. My experience in infectious eczematoid dermatitis was similar to that with other agents, but Furacin seems less likely to cause irritation or hypersensitivity than do sulfonamide drugs or penicillin. Perhaps past experience has taught the limitations and disadvantages of prolonged application of antiseptics in that peculiar disorder. The successful treatment of various types of ulcers and wounds is encouraging. I have found Furacin useful in dressing the slightly infected wounds after electrosurgery of warts and nevi. There and in all disorders I use it with less hesitation than sulfonamide compounds or penicillin, because the patient has so much less to lose if hypersensitivity occurs. I think that Furacin should prove to be a useful addition to the short list of antiseptics satisfactory in dermatology. Dermatologists must take more interest in scientific study of antiseptics, as neither bacteriologists nor surgeons are familiar with our problems. Downing reiterates Underwood's comments that topical agents must be tested, not only in the laboratory and on normal skin but also in the presence of dermatitis and particularly in allergic dermatoses. Dermatologists should search for agents which are not likely to be given internally and thus avoid the unfortunate results of systemic hypersensitization which developed in many patients as a result of unwise application of sulfonamide compounds and penicillin. While Furacin has some effect on systemic infection, it seems not likely to be used orally or by injection, and this seems to be its major advantage in topical therapy.

DR. W. R. HILL, Boston: In a patient who had been receiving treatment for acne a traumatic ulcer of the leg developed. An application of 5-nitro-2-furaldehyde semicarbazone was used on this lesion, and within a period of twleve hours a generalized psoriasiform eruption developed. Four days later the skin over the right scapula, which had been sensitized to adhesive tape several months prior to the present dermatitis, showed psoriasiform lesions outlining the site of the adhesive dermatitis. All local therapy was omitted, and within a week the entire psoriasiform eruption had disappeared. Specimens of skin removed for biopsy from several sites, including the area sensitized to adhesive tape, were consistent with the histologic picture observed in psoriasis resulting from arsenical sensitization.

Although reactions to patch tests performed one week after the application of 5-nitro-2-furaldehyde semicarbazone were negative, we thought that the drug was the most likely cause of the dermatitis.

Dr. John Godwin Downing, Boston: I wish to thank the discussers. I was pleased to know that Drs. Hopkins and Lynch would lead the discussion. I knew that their conservative evaluation of this drug would be extremely helpful. Throughout this study the manufacturer was cooperative and anxious to try to eliminate the factor causing the sensitivity by stabilizing the vehicle, which I believe is a factor. We retested some of the original formula and a new formula on 25 patients and then retested them after a period of ten days. These studies show that we have a drug with definite sensitizing properties for normal skins. In this report I have tried to make a conservative evaluation of this drug. An attempt has been made to indicate the entities in which it has been found to be of value, and to stress the untoward reactions caused by its use. By the latter we hope to avoid the pitfalls which have occurred in the use of known sensitizers, such as mercury, sulfonamide drugs and penicillin. All dermatologists are cognizant of these and warn patients accordingly when prescribing them. The sulfonamide compounds have been so notorious in producing sensitization reactions that most dermatologists avoid using them in the form of ointments. At the meeting of the American Dermatological Association in Virginia, sensitization from the topical application of penicillin was discussed and cited as being as frequent as 20 per cent. Two recent papers by Gottschalk and colleagues have shown that in 10.4 per cent of the patients treated with penicillin ointment a contact dermatitis developed. Later they showed that by means of patch tests they were able to produce epidermal sensitization to penicillin ointment in 4.5 per cent of 200 persons. They concluded that there is no contraindication to well controlled experimental use of penicillin locally, provided the patient is followed carefully and observed for untoward reactions. Perhaps we should hesitate to introduce a new antibiotic. However, if we read the literature, we will all suffer temerity in treatment, for the local action of even boric acid has been condemned. Practically all usable drugs have their contraindications. However, proper use of them and careful observation of the patient should prevent these reactions, with the exception of the rare case as an unforeseen idiosyncrasy such as the patient described by Dr. Hill. I do not recommend that Furacin Soluble Dressing be used on all ulcers and infections in which old and tried drugs have produced satisfactory results, but I do believe that it will produce results in the aforementioned entities resistant to ordinary therapy.

Toxoplasma.—Since its original description over thirty years ago, spontaneous infections with Toxoplasma have been reported in a large number of species of mammals, reptiles and birds from many parts of the world. In 1923 Jankû reported the first instance of human infection. The disease occurred in an infant as an encephalomyelitis with chorioretinitis. Jankû described the micro-organism but was unable to identify it. Subsequent morphologic studies have established the identity of Jankû's case and it is now accepted as the first reported case of human toxoplasmic infection. The second case of human infection with Toxoplasma was reported by Torres in 1927. The disease occurred in an infant and at that time the parasite was classified as an encephalitozoon, although Toxoplasma was considered. . . . Since the report of Wolf, Cowen and Paige 15 other cases of human infection with Toxoplasma having pathologic study have appeared in the literature, making a total of 18 cases to date. Thirteen have occurred in infants, 1 in a child 6 years of age and 4 in adults. In 4 instances Toxoplasma was recovered and identified biologically by inoculation of the diseased tissues into laboratory animals. The other 14 cases have had morphologic studies in which the organisms have been identified in tissue sections.—Callahan, William P., Jr.; Russell, William O., and Smith, Margaret: Human Toxoplasmosis, *Medicine*, December 1946.

RINGWORM OF THE SCALP

Report of the Present Epidemic

RICHARD J. STEVES, M.D.
Des Moines, Iowa
and
FRANCIS W. LYNCH, M.D.
St. Paul

In recent years ringworm of the scalp has assumed a position of considerable importance in the United States. It was formerly unnecessary for most physicians to be familiar with the problem because of the rarity of the epidemic form in this country, but recently epidemics have spread the disease widely throughout the nation. Some forms of ringworm of the scalp spread rapidly, are capable of causing epidemics and are resistant to topical therapy. Because of the increasing number of cases of this type the problem has become one of public health, and protection of the community is as important as treatment of the individual.

In 1822 Wilkinson [1] recorded an epidemic in England. Cases have since been reported throughout the world, but the greatest incidence of the disease has been in France and in England. In 1843 David Gruby [2] described the causative organism of epidemic ringworm and named it Microsporum audouini. His work went unnoted or disbelieved until 1910, when Sabouraud [3] "rediscovered" the Microsporum of Gruby and succeeded in growing it on artificial mediums. The discoveries of Sabouraud demonstrated that ringworm of the scalp can result from infection with either the Microsporum or the Trichophyton group of fungi.

TYPES OF INFECTION

Both the Trichophyton and the Microsporum group have species which are (*a*) pathogenic principally for certain lower animals (zoophilic) and (*b*) species which are pathogenic principally for human beings (anthropophilic).[4]

Infections contracted from animals have two important characteristics; they are but slightly, if at all, contagious among human beings, and they either are self limited or respond to topical therapy. Humans are poor hosts for this group of fungi, and, as Lewis and Hopper [5] showed, the self-limited features of these fungi may be accounted for by the development of antibodies and the production of an inflammatory reaction in the neighborhood of the infected hairs.

Kerion is a descriptive term denoting a fungous infection of a hairy region in which the inflammatory element is pronounced. There results a granuloma containing multiple openings from which pus exudes. The disease spontaneously disappears in two or three months. Kerion is usually caused by Trichophyton gypseum contracted from cattle and thus occurs most frequently in rural areas. In rare instances other fungi may produce an inflammatory reaction severe enough to be classed as kerion. Several cases were observed in our

---

From the Division of Dermatology, University of Minnesota, Dr. H. E. Michelson, Director.

[1] Wilkinson, J. H.: Remarks on Cutaneous Diseases, London, John and Arthur Arch, 1822, p. 38.

[2] Zakon, S. J., and Benedek, T.: David Gruby and the Centenary of Medical Mycology, Bull. Inst. Hist. Med. **16**:155 (July) 1944.

[3] Sabouraud, R.: Les teignes, Paris, Masson & Cie, 1910.

[4] Wise, F., and Sulzberger, M. B.: Modern Treatment of Common Fungus Infections, in The Year Book of Dermatology and Syphilology, Chicago, The Year Book Publishers, Inc., 1938, p. 12.

[5] Lewis, G. M., and Hopper, M. E.: Ringworm of the Scalp, Arch. Dermat. & Syph. **36**:1194 (Dec.) 1937.

present series in which kerion resulted from M. audouini.

In the United States, Microsporum lanosum is the important "animal" (zoophilic) representative of the Microsporum group and is generally transmitted by cats or dogs. Unlike the disease contracted from cattle, M. lanosum usually produces but slight inflammatory reaction. Several members of a family may be infected from the same pet, but extensive epidemics do not occur. Infections produced by M. lanosum must be differentiated from the epidemic form (M. audouini) because they are self limited and nonepidemic.

Infections with "human" (anthropophilic) fungi are grouped, because they are contagious and are usually resistant to topical therapy. The lack of antibodies and severe inflammatory reaction is ideal for survival of the fungus and allows infection to persist for years.

The genus Trichophyton has several species in the anthropophilic group, called endothrix because the spores invade the shaft of the hair. Infections with endothrix Trichophyton are rare and nonepidemic in the United States. Three cases which were observed by us accounted for 0.5 per cent of the total.

More attention will be given later to M. audouini, which has been responsible for the recent rapid increase in ringworm of the scalp in the United States.

DIAGNOSIS

Clinical inspection may suggest a diagnosis of ringworm of the scalp, and in some instances the causative species may be suspected. A gray patch containing broken hairs, a fine scale and a noninflammatory base suggests the epidemic form (M. audouini). In kerion, where the inflammatory reaction reaches its highest degree, the causative organism is usually T. gypseum, and cattle are the usual source of infection. However, infections caused by various fungi often resemble each other, and additional diagnostic procedures are necessary.

Microscopic examination of a hair covered with a 20 per cent solution of sodium hydroxide establishes the mycotic nature of the disease if spores are found, but this method usually fails to determine the genus of the species. If the spores are arranged in a sheath around the hair, the fungus is termed ectothrix (M. lanosum, M. audouini and T. gypseum); if the spores invade the shaft, the fungus is termed endothrix (Trichophyton of human origin).

The Wood light (black light) was first used in the diagnosis of ringworm of the scalp by Margarot and Devèze[6] in 1926. This light produces a brilliant green fluorescence of hairs infected by either M. audouini or M. lanosum but only a dull white or gray fluorescence of hairs infected by some of the endothrix Trichophyton fungi. The difference is striking and easily detected. Thus with the Wood light one can recognize infections caused by the genus Microsporum but cannot differentiate between those caused by M. lanosum (animal) and by M. audouini (human). It is of great value in the survey of school children because it permits early detection of cases. One or more negative examinations are usually required before a treated child is allowed to return to school.

A culture of the organism on artificial mediums (i. e., Sabouraud's dextrose peptone agar) is essential to the establishment of an etiologic diagnosis. Fluorescent hairs are placed on an agar slant and after seven days at room temperature the characteristics of the growth will enable an experienced observer to determine the genus and species.[7]

THE PRESENT EPIDEMIC

By "epidemic ringworm of the scalp" is meant that form caused by M. audouini. Prior to 1940 the greater part of the United States was free from this resistant and highly contagious disease. Reports of its greatest incidence came from England and France, and after the first world war several epidemics were reported in Germany.[8] In New York and Chicago sporadic cases and localized outbreaks occurred, but Lewis and others[9] stated that prior to 1943 there was no report in the American literature of a pandemic such as is now affecting children in widely separated parts of the country. According to Mitchell, Story and Macdonald,[10] an unusual incidence was observed in a school district in New York in November 1942. Epidemics also appeared in Philadelphia, Niagara Falls, N. Y., Chicago and Detroit[11] with thousands of cases in some cities.

In an attempt to determine the extent of the present epidemic questionnaires were sent in January 1946 to the health officer in at least two cities in each state and in each city with a population of over 40,000. Replies were received from 175 of 220 inquiries. Epidemic ringworm of the scalp had appeared in 61 cities (shown in fig. 1), and replies indicated that it probably was present in 27 additional cities. The limitations of such a survey are obvious, but it demonstrates the nationwide character of the present epidemic.

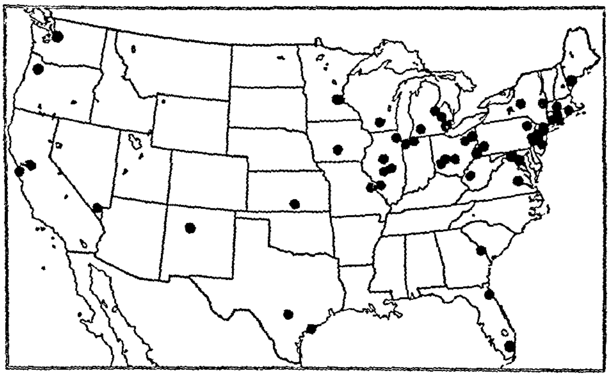


Fig. 1.—This map shows the location of cities in the United States in which the epidemic form of ringworm of the scalp has appeared. (The survey was made in January 1946.)

An unusual opportunity presented itself to study an epidemic in the twin cities of Minneapolis and St. Paul, where every form of ringworm of the scalp was rare prior to 1943. In 1945 and 1946 about 747 cases were observed in Minneapolis, St. Paul and surrounding communities. M. audouini was the organism responsible for all the cases in St. Paul and surrounding communities, but not in Minneapolis, where nearly 20 per cent of the cases were caused by other types of fungi (see the accompanying table).

---

[6] Margarot, J., and Devèze, P. Aspect de quelques dermatoses en lumière ultraparaviolette—Note preliminaire, Bull. Soc. d. sc. med. et biol. de Montpellier **6:** 375 (June) 1925

[7] Conant, N. F., and others: Manual of Clinical Mycology, Philadelphia, W. B Saunders Company, 1944, p. 244.

[8] Buschke, A., and Klemm, G.: Klinische Beobachtungen über die jetzt in Berlin herrschende Mikrosporieepidemie, Dermat. Wchnschr. **72:** 453 (June) 1921. Kleinschmidt, L.: Zur Röntgenbehandlung der Mikrosporie, ibid. **73:** 855 (Aug.) 1921.

[9] Lewis, G. M., and others: Measures to Prevent and Control an Epidemic of Ringworm of the Scalp, New York State J. Med. **44:** 1327 (June 15) 1944.

[10] Mitchell, H. H.; Story, L. S., and Macdonald, J. C.: An Epidemic of Ringworm of the Scalp, Pub. Health Nursing **35:** 564 (Oct.) 1943.

[11] Livingood, C. S., and Pillsbury, D. M.: Ringworm of the Scalp, J. Invest. Dermat. **4:** 43 (Feb.) 1941. Reif, F. B.: Prevention of Ringworm of the Scalp in Children, Arch. Dermat. & Syph. **48:** 533 (Nov.) 1943. Benedek, T., and Felsher, I. M.: Epidemiology of Tinea Capitis, ibid. **49:** 120 (Feb.) 1944.

Practically all patients presented one or more areas of broken hair and gray scaling with little other evidence of inflammation. Both clinically and in their fluorescence, definite similarity existed between cases caused by M. audouini and those due to M. lanosum. The occiput was the usual site of initial involvement, although it often began in the temporal region and occasionally elsewhere. Infection of the eyelashes was noted in 1 case from which M. audouini was isolated.

Of 635 children infected by M. audouini, the average age was 7.2 years, the ages varying from 1 to 16 years.

Infection was found nine times as often in boys as in girls.

The epidemic apparently began in St. Paul with the infection of a Negro family, and 3 per cent of the total cases were observed among Negroes. This is approximately 50 per cent greater than the proportion of Negro persons in the total population.

In St. Paul several examples of ringworm of the scalp were recognized in 1941, a few more in 1942 and 1943, and the number slowly increased through 1944. The rapidity with which the disease spread during the year 1945, when, for a time in St. Paul, the epidemic threatened to become out of control, is indicated by figures 2 and 3 and by the following figures:

Total Cases to Date	Minneapolis	St. Paul
Jan. 1, 1945	2	51
Jan. 1, 1946	51	584

TABLE 1.—*Causative Organisms in 1945 and 1946 Epidemic*

	Minneapolis Cases	St. Paul Cases	Total Cases
M. audouini	51 (81%)	584 (100%)	635 (98%)
T. violaceum	2 (3%)		2 (0.3%)
M. lanosum	9 (14%)		9 (1.5%)
T. crateriforme	1 (2%)		1 (0.2%)

TABLE 2.—*Analysis of Treatment of 486 Cases*

	Cases	Cures	Failures
Manual treatment	298	75 (25%)	225 (75%)
X-ray epilation	188	150 (80%)	38 (20%)

During the epidemic in St. Paul and Minneapolis cases were observed in surrounding communities. Sporadic cases occurred in two suburbs and mild epidemics in three. Several small cities 35 to 150 miles distant had a total of about 100 cases. It appears that the epidemic in Minneapolis and St. Paul acted as a focus for dissemination to surrounding smaller communities.

TREATMENT

Spontaneous cures in children with ringworm of the scalp were noted by Sabouraud;[12] Lewis and his associates[13] emphasized that the disease is self limited or responds to topical therapy when caused by organisms pathologic for lower animals. In the present series all cases caused by M. lanosum were cured within two months. The epidemic form (M. audouini) is notoriously resistant to therapy, though it disappears spontaneously at puberty. Livingood and Pillsbury[11] reported cures by means of topical applications in one third of the cases studied.

The results of treatment were carefully reviewed in 486 cases in St. Paul (table 2). In each case the scalp of the child was clipped and fluorescent hairs were manually removed once or twice a week. The parents were instructed in the daily application of simple topical remedies (mild tincture of iodine, or ointments containing sulfur, ammoniated mercury or undecylenic acid and its zinc salt). Within three months 25 per cent of 298 patients were cured. In 188 cases the children were treated with epilation by means of roentgen rays in addition to the above regimen, and 80 per cent were cured within three months. (To some extent the group which did not receive roentgenologic epilation was selected because of a minimal infection, but the group also included patients who refused epilation or for whom this procedure was temporarily unavailable.) Patients were regarded as cured after two examinations under the Wood light failed to show fluorescent hair. The sex or age of patients had little influence on the response to treatment.

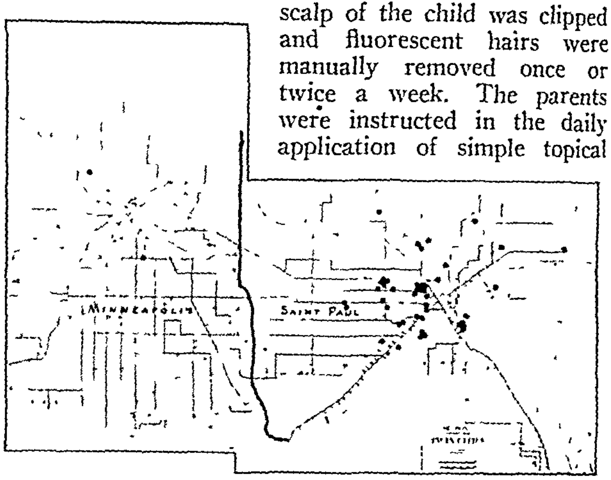


Fig. 2.—Each dot locates the residence of 1 child with ringworm of the scalp in Minneapolis and St. Paul, reported prior to Jan. 1, 1945.

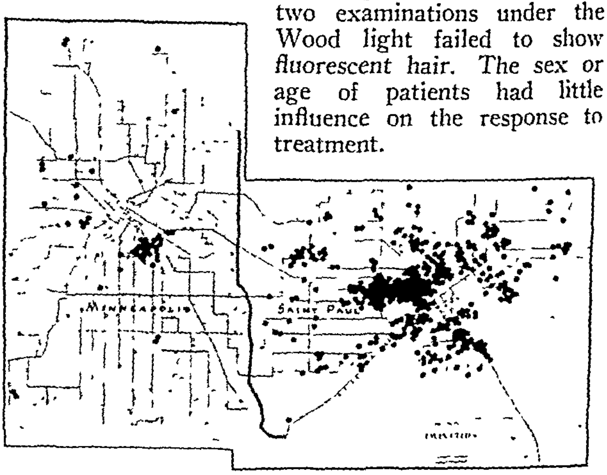


Fig. 3.—Each dot locates the residence of 1 child with ringworm of the scalp in Minneapolis and St. Paul, reported prior to Jan. 1, 1946. Comparison with the map in figure 2 demonstrates the rapid spread of the epidemic during 1945.

EPIDEMIOLOGY

It is unique in medical science to have the spread of a highly contagious disease depend on the transfer of infected hair from one child to another. Contact occurring within the school has been considered important, but we believe that the school itself is not a major

---

12. Sabouraud,[3] p. 214.

13. Lewis, G. M., and Miller, H. C.: Ringworm of the Scalp, Arch. Dermat. & Syph. 29: 890 (June) 1934. Lewis, G. M.: Ringworm of the Scalp: Curability Without Depilating Measures, Am. J. M. Sc. 189: 364 (March) 1935. Lewis, G. M., and Hopper, M. E.: Ringworm of the Scalp, Arch. Dermat. & Syph. 35: 460 (March) 1937.

factor in an epidemic. The incidence of new cases was as great during the summer months as during the school year, although many were unrecognized until the children returned to school. Of the seventeen schools involved in Minneapolis, epidemics occurred in two. In St. Paul ringworm appeared in fifty-three schools, but in thirty of these there were fewer than 5 cases each.

The frequent occurrence of the disease in siblings demonstrated its contagiousness by means of intimate contact. Among the preschool group 43 per cent had siblings with the disease; in one family 6 of 9 children were infected.

Numerous observers have suggested the barbershop as a source of new infections. Evidence here is entirely circumstantial and is based on the observation that the disease occurs most frequently in boys (9:1 in our series) and that the usual site of onset is the occipital region. It is contended that the clippers and the neck brush would carry infected hairs to the occipital region and would also explain the increased incidence in boys. No case came under our observation in which the infection could with certainty be traced to a barbershop. Although 80 per cent of the boys patronized public barbershops, none of the girls did so.

The deposit of infected hairs on the backs of theater seats has been suggested as a means of spreading ringworm of the scalp. Reif [11] believed that this was important in the spread of an epidemic in Niagara Falls, N. Y. Farley [14] found that after four hundred and twenty-four days hairs infected with fungi produced a growth on cultural mediums. Evidence is available that theater seats may be grossly contaminated with infected hairs. Theaters were attended by 97 per cent of 114 children with ringworm of the scalp who were questioned by us, and 78 per cent of this group admitted attending theaters after they knew they had ringworm. In our opinion contamination of theaters was probably an important factor in the development of the epidemic in Minnesota.

The greatest incidence of the disease occurs in the East and Middle West (fig. 1). This may be due to New York City, Washington, D. C., Chicago and Detroit acting as large foci from which other communities are infected. As shown by this study, other cities in which the epidemics are less extensive may act as secondary foci, producing dissemination to still smaller communities.

COMMENT

The experience of the past few years in Minnesota has demonstrated that it is important for all physicians to be familiar with the epidemic form of ringworm of the scalp. In many localities it is occurring for the first time and must be differentiated from the forms of ringworm which previously existed in those areas.

It was interesting to observe and compare the epidemics in the adjoining cities of Minneapolis and St. Paul. In St. Paul the epidemic was severe and early in 1945 threatened to become out of control, whereas in Minneapolis the number of cases was relatively few. We believe that the reason for these differences is principally in the amount of effort which was expended in combating the epidemics during their early stages. St. Paul was one year ahead of Minneapolis in experiencing serious numbers of cases. Thus facilities were in readiness in Minneapolis, and there was no delay in giving patients roentgen ray therapy once the diagnosis was made.

The methods of control which should be employed to prevent an epidemic have been excellently presented by Lewis and others.[9] If the active cases in any given locality exceeds a certain number, the diagnostic and therapeutic facilities will be unable to cope with the situation, and the epidemic can be brought under control only with great difficulty. This has occurred in several cities in the United States, and the disease rages unchecked, with the number of cases ranging in the thousands. In St. Paul the epidemic was controlled only with great difficulty and at a considerable cost. In other cities in Minnesota early recognition of the disease and adequate facilities for treatment brought the epidemics quickly under control.

Because of the national scope of the present epidemic we think it important for physicians to raise their threshold of suspicion in diseases of the scalp. Any gray, scaling patch containing broken hairs should be suspected of being ringworm, and physicians should request aid in obtaining an exact diagnosis. In the threat or in the presence of an epidemic the individual physician cannot handle the problem alone. The public health aspects of the disease far outweigh the treatment of the individual patient, and it is the duty of the school, city, county and state health departments to take adequate and early precautions to prevent spread. In Minnesota special ringworm centers were established for the diagnosis and treatment of the epidemic, and in St. Paul a special school was instituted for the children who were prohibited from attending regular schools.

Use of the Wood light is indispensable in the presence of an epidemic. It is used in surveying schools to detect early or unrecognized cases, and it is the only satisfactory method of determining when a case has been cured.

Patients infected with fungi pathogenic for lower animals may be cured with topical applications, and many patients infected with the epidemic form of the disease may be cured by topical application and frequently repeated manual removal of fluorescent hairs. In our experience, roentgenologic epilation was far superior both in rapidity and in percentage of cases cured and should thus be used routinely in the presence of an epidemic until better therapeutic methods are developed. New therapeutic agents are being studied and may prove highly effective.

SUMMARY

1. Information from questionnaires indicates that an epidemic form of ringworm of the scalp has appeared in most sections of the United States.

2. In many communities, including Minnesota, this disease is appearing for the first time.

3. A recent epidemic occurring in Minnesota has involved 747 children.

4. In a selected series of cases, 25 per cent of the children were cured by means of "manual therapy." Roentgen ray epilation of the hair of the scalp was followed by cure in 80 per cent of the cases, and this was the method of choice.

5. The spread from Minneapolis and St. Paul to smaller communities throughout the state is reported, and the possibility of an epidemic becoming out of control is stressed.

ADDENDUM.—The total number of cases of ringworm of the scalp in the epidemic in St. Paul reached 834 on Dec. 31, 1946, of which number only 3 were caused by Microsporum lanosum. On that date only 73 patients remained under treatment.

---

[14] Farley, D. L.: Viability of Ringworm Fungi in Dry Cutaneous Material. Arch. Dermat. & Syph. 3:759 (June) 1921.

Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association and Hygeia, the Health Magazine
Chicago

(Continued from page 243)

(NOTE.—*Following is the thirteenth chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of THE JOURNAL. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in THE JOURNAL. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—ED.)

CHAPTER 13. *The Journal Gains*

1885

Almost forty years had passed since the American Medical Association had been organized at Philadelphia. In the intervening period the Johns Hopkins University had been founded; bacteria had been grown on artificial mediums; Alexander Graham Bell had introduced the telephone, for which many doctors' wives would curse him roundly in the years that were to come.

The gonococcus was discovered by Neisser in 1879, and Pasteur isolated the streptococcus and the staphylococcus in 1880. Every one of these discoveries was to be reflected within a few years in the discussions of the scientific sections of the American Medical Association.

Dr. John Shaw Billings had taken a considerable part in the work of the American Medical Association, particularly in its Section on State Medicine (which we today would call public health). In 1880 John Shaw Billings published the first volume of the *Index Catalogue,* the first attempt to index regularly the medical periodical literature of the world.

In 1880 also the American Surgical Association was founded, the first society devoted exclusively to specialists. Only a few years before there had been many discussions on the rights of specialists compared with the rights of general practitioners. The economic, scientific and social aspects of specialization in medicine were to attract increasing attention and to become major subjects of medical discussion as the years rolled by.

With the discovery of bacteria and of first antiseptic and then aseptic surgery the surgeons began increasingly to invade portions of the body never before accessible. In 1881 Billroth resected the pylorus, and in the same year Czerny described vaginal excision of uterine tumors and Hahn removed a kidney. In 1882 Robert Koch discovered the tubercle bacillus.

The scientific papers read before the sections of the American Medical Association began increasingly to attempt to reconcile the newer knowledge of germs in the causation of disease with the weird and sometimes mystical classifications of disease that had characterized previous excursions by the medical profession into the problems of disease causation.

THE NEW ORLEANS SESSION

As 1885 dawned THE JOURNAL for January 3 of that year apologized because the last issue for December of 1884 had appeared late. A single galley of proof had been tied up somewhere in the Christmas rush in the postoffice, and the list of members had taken two pages more than had been anticipated because of the increase in membership.

There was still some argument as to whether or not diphtheria was a contagious disease. Indeed, in the light of *post hoc* knowledge, some of the discussions of the 1880's seem bizarre indeed. There was quite a battle over the question of whether or not a solid stethoscope would convey sound better than a hollow one.

THE JOURNAL was beginning to make its presence felt on the medical profession. The interest in the American Medical Association was increasing. Sectionalism was developing in American medicine; it was to be the source of much anguish and misunderstanding for years to come. These misunderstandings reflected in some instances the thirst for prestige and power by the publishers and editors of some of the Eastern medical journals.

Another source of disturbance was the practice of the homeopathic system and the bitterness against homeopathy manifested by such leaders as Oliver Wendell Holmes. The powers in the American Medical Association felt that the abandonment by the New York State Medical Association of principles of ethics concerned chiefly with consultations by members of the Association with physicians who adhered to peculiar medical beliefs was a direct thrust at the foundation stones of the Association itself.

THE JOURNAL

In March 1885 N. S. Davis gave account of his progress with THE JOURNAL. He informed the readers that he had told the Board of Trustees that "under no circumstances" would he extend his work as editor beyond the current year. Less than two years had passed since the first number of THE JOURNAL was issued. There had been continuous growth of the membership, which had increased from 1,428 in 1875 to 3,887 in 1885. The *British Medical Journal,* cited everywhere as the foremost publication in medicine, had been founded in 1865 and had achieved by 1885 a circulation of 12,000.

In a later editorial the editor noted how greatly THE JOURNAL had aided in hastening the publication of important contributions made at the annual session and how well it had reflected the general progress of medicine in the United States. The annual income of the American Medical Association had risen from $5,008 in 1879 to $13,017.25 in 1884 and to $18,117.25 in 1885. The Association was thus quite solvent: its income just about balanced its budget. We see later that this balancing was made possible by the failure of the editor and of some of his helpers to collect any income whatever for their work. In a final editorial on the current situation, Dr. N. S. Davis pointed out that he had been unable to employ necessary help because of inadequate funds in the treasury and that the printer had been willing to postpone some of the payment on his account. "By deferring all pay for his own services, and limiting thus the number of paid assistants, he conserved enough in the treasury to pay all publication expenses promptly and at the end of the year from the later collections received for himself a reasonable remuneration for the editorial work performed and left a surplus sufficient to pay the other current expenses of the Association."

The editor had been disturbed by the fact that members who had contributed papers, reports and addresses had failed to send them promptly to The Journal in accordance with the By-Laws. Other medical periodicals had had access to this material and they had taken away its journalistic newness by publication of abstracts before there was opportunity to publish the material in The Journal. Dr. N. S. Davis then established the policy that the address of the President of the American Medical Association should be published in the week in which he delivered it and the chairman of the individual sections would have their addresses published in The Journal each week that followed.

In the first editorial for April 1885 the editor discussed at considerable length the problems of printing involved in publishing The Journal. There were attempts to turn over the publication to commercial publishers and thus to take it away from its direct control by the Board of Trustees. Dr. Davis felt that it was time to fix the place of publication for a term of years and to purchase necessary printing equipment so that the composition of The Journal would be the work of the Association, although the press work could be done elsewhere. Dr. Davis urged the establishment of its own press by the Association because he felt certain that this would lead eventually to a much better publication and to complete control by the organization itself.

Another sign of growing pains was the introduction of several resolutions having to do with the membership in the Association and with membership on the nominating committee. There was naturally some objection to having members of the nominating committee nominate themselves to important offices.

The meeting in 1885 at New Orleans heard an address by the President, Dr. Henry F. Campbell of Augusta, Ga. Southern oratory rolled in resounding phrases. Thus he spoke of the passing of S. D. Gross and J. Marion Sims:

> With shining robes more honorable than any toga of office we can put upon them, with crowns more resplendent than those of earthly monarchs, and with harps and melodies more entrancing than the music of our love or the anthems of our praise, they hear no more the voice of human adulation.

However, after some pages of this fluorescent diction Dr. Campbell turned his attention to serious criticism. He praised the development of The Journal. He poured satire on professional testimony in the courts and on the lawyers who cross examined the medical witnesses. He urged the establishment of a section devoted to forensic medicine.

THE ARMY LIBRARY

Dr. John Shaw Billings reported the complete success of the effort to obtain an appropriation from Congress for fireproof buildings for the Army Medical Museum and Library, and he announced that the building operations would soon be commenced. The building, reported first in 1885, still stands in Washington in 1947—a veritable firetrap—holding in its bursting walls millions of books and pamphlets of incalculable value while members of the medical profession and of innumerable other agencies urge the Congress again and again to make adequate appropriation for the building of a modern structure worthy to house the treasures whose existence is threatened every moment by the inadequacy of the old building that now contains them.

THE EDITOR

The Board of Trustees announced that it had earnestly requested Dr. Davis to withdraw his resignation and to continue his relations with The Journal as its supervising editor. His sense of duty impelled him to suspend his resignation and to yield to the unanimous request of the Board to continue his editorial superintendence of The Journal until such time as a successor could be appointed.

THE BENJAMIN RUSH MONUMENT

The House of Delegates had been intent on developing funds for the monument for Benjamin Rush to be unveiled at the meeting of the International Medical Congress which would be held in 1887. Some $45,000 was needed for this purpose and it was to be collected by a maximum contribution of $1 from each subscriber; the monument would be erected in Washington. The committee called attention to the manner in which statesmen, military heroes and naval heroes had been honored with monuments as had also painters, sculptors and various scientists.

Benjamin Rush received his A.B. degree from Princeton when less than 15 years old. He studied medicine with John Redman in Philadelphia for six years and translated the aphorisms of Hippocrates from the original Greek. As a student when only 17 he had described the epidemic of yellow fever that prevailed in Philadelphia. After obtaining his degree of doctor of medicine at Edinburgh in 1766 he studied in London and in Paris and returned to the United States in 1769. He was one of the signers of the Declaration of Independence. Benjamin Rush was one of the surgeon generals in the Army of the Revolution and a member of the convention that adopted the federal Constitution, which he called "a masterpiece of human wisdom."

In 1789 he succeeded Dr. Morgan in the chair of theory and practice of medicine in the Medical College of Philadelphia. Once the federal government was established, he devoted himself wholly to his profession and to civic affairs. The only office which he accepted as a reward for his many government services was the position of president of the mint, which he held for fourteen years. He was one of the vice presidents of the American Philosophical Society; he aided in founding Dickinson College; he was president of the American Society for the Abolition of Slavery. Benjamin Rush died in 1813 at the age of 68 as a victim of an epidemic of typhus.

1886

ST. LOUIS

Early in 1886 attention was called by THE JOURNAL to the crowded character of the program of the American Medical Association. The difficulty was that the addresses of the chairmen of the sections were taking too long in some instances and not long enough in others. This agitation was to culminate in the eventual divorcement of the reading of the chairmen's addresses from the general meeting and the limitation of such addresses to the sections themselves. This divorcement, however, was another step in the tendency toward specialization, since its inevitable result was to limit the consideration of special topics to the specialists and to make impossible their delivery to the general practitioners, who might be said to need them most.

There was also some criticism of the attempts to build a program by the voluntary offering of papers. The chairmen and secretaries were urged to invite contributions from competent authorities on important subjects so that there would be at least one or two leading papers in each section and at least one or two equally qualified members to open the discussions of the papers.

One cannot but pause to marvel again at the insight and organizational ability of Nathan Smith Davis. As one views the progress and development of the American Medical Association and the elements in its activities which have obtained permanent status, one finds again and again that the concept arose in the mind of Dr. N. S. Davis, that it was presented by him so clearly and succinctly as to carry conviction and that he fought for these steps in progress with a persistence and sincerity that led inevitably to their success.

BATTLE OVER THE INTERNATIONAL CONGRESS

The jealousies of which mention has been previously made flared into public view early in 1886, when the editors of some of the Eastern medical journals denied the right of the American Medical Association to participate largely in the formation of a forthcoming International Congress of Medicine to be held in Washington. These Eastern editors endeavored to sabotage the American Medical Association's committee and tried to deter members of the profession from accepting any official positions in the preliminary organization of the congress. In an attempt to overcome this opposition, places on the national committee were offered to the most eminent of those in the opposition. The battle waged so fiercely that attempts were made to control the election of delegates to the meeting of the American Medical Association with a view to mustering a majority at the meeting in St. Louis. These efforts also failed.

Mingled with this controversy was the question of the status of the homeopathists. Apparently foreign countries had admitted homeopathists to their delegations and it was desired that homeopathists be admitted to the American delegation. Then arose the question of admitting not only homeopathists but also eclectics, physiomedical graduates, hygiotherapeutic graduates and those of some other schools. To settle the difficulty, an official announcement by the American Medical Association made it clear that any legally acknowledged practitioner would be admitted to the congress.

Much of the attack centered on Dr. John Shaw Billings, as secretary of the original committee of seven which was planning the congress. The American Medical Association called on him to explain exactly what he and his committee really did expect of the Association. The original committee of seven had been commissioned to go to Copenhagen in 1884 and to invite the International Medical Congress to meet in the United States. A somewhat satirical comment in THE JOURNAL stated that "they satisfactorily performed this office and through their spokesman promised the members a generous welcome, he pledging himself to do a variety of things without reservation (expressed, at least), as to the contingency of his not being allowed to have everything his own way."

Apparently there were a good many political appointments made to positions of distinction, and there was general resentment against these actions and attitudes.

MEDICAL ORGANIZATION

In the meantime there began to be repercussions in Philadelphia over the charge of political manipulation of its delegation to the American Medical Association. A secret caucus had been held for the nomination of delegates, and the members, having discovered this fact, began to be resentful. Some of these discussions led the editor of THE JOURNAL, Dr. N. S. Davis, to publish an editorial in the issue of Feb. 27, 1886 urging the possibility of reorganization of the American Medical Association along the lines of the British Medical Association with the fundamental principle of membership in a county and state medical society as a basis for membership in the American Medical Association. The decision to organize the American Medical Association along such lines had caused the organization of state medical societies where none existed and had caused the reorganization of state medical societies which had been allowed to die. The editor pointed out that the admission of two delegates from the faculty of each medical college and one from the staff of each hospital, lunatic asylum and dispensary not only gave these medical men a much larger number of delegates but removed from them the incentive to become members and to officiate as members in their own state medical societies. Ultimately this change in the method of organization was to be one of the most important single influences in building a strong democratic representative body.

This editorial led to an extensive correspondence objecting to the organization of the American Medical Association with branch societies as is done in Great Britain and insisting that the system whereby the state medical societies constitute the real branches of the organization was a proper one for a country such as ours. The organizational technic of N. S. Davis is nowhere better manifested than in this practice of writing an editorial to stimulate discussion in the correspondence columns, reactivating discussion by further editorials when it tended to die and thus maintaining the interest of members of the Association everywhere in the problems of its conduct.

As might be expected, however, there were certain definitely disorganizing influences which arose from this discussion. One finds an attack on a former President of the American Medical Association as being a man who did not merit the position but who was elected to it only for his political influence. There was an editorial in the *Nashville Journal of Medicine and Surgery* in February 1886 which was reprinted in the *Medical News* of Philadelphia, claiming that the American Medical Association was a body merely medicopolitical, full of political intrigue and trickery. There was an attack on this editorial accusing the editor of the *Nashville Journal of Medicine and Surgery* of having "the effrontery to parade such intentions before an intelligent profession." The political battle being waged in editorials and in correspondence was moving into the stage of hand-to-hand conflict at the next annual session of the American Medical Association.

SOCIAL FUNCTIONS

In April 1886 Dr. Davis was again moved to turn his attention to the social functions at the annual session. He expressed his appreciation of the meeting in Boston in 1849, when "one evening was set apart for a general social mêlée or promenade in a public hall for the laudable purpose of affording more direct social intercourse of members from all parts of the country. With genuine good taste the local committee provided no other refreshments than coffee, simple cakes and fruit on a side table where those who wished could partake when they pleased. But this simple and very pleasant example was quickly converted into the form of a public banquet, which each subsequent local committee of arrangements endeavored to make more magnificent and costly than their predecessors, until at New York in 1853 the banquet alone was said to have cost more than $10,000; and the next year at St. Louis its extravagance and the excesses accompanying it led to the adoption of a resolution offered by the late Professor S. D. Gross forbidding all subsequent committees of arrangements to provide any public banquet in connection with the annual meetings of the Association."

This multiplication of official functions and similar jamborees led eventually to the adoption of a general rule that each alternate meeting should be held in Washington and that the necessary expenses for halls and programs should be met by the Association.

THE ST. LOUIS SESSION

When the Association convened in St. Louis it was announced that protests had been entered against the delegates from the Philadelphia County Medical Society, the New York Academy of Medicine, the Tri-State Medical Society, the Mississippi Valley Association and the Davidson County Medical Society, and one Tennessee doctor protested against the Tennessee State Medical Association.

The meeting in St. Louis brought an attendance of 1,100. The address of the President, Dr. William Brodie, paid tribute to the great men of the profession who had died during the year, among whom was Dr. Austin Flint. Dr. Brodie told of the effectiveness of the Association in raising the standards of medical education. He listed the prize essays as an indication of its scientific contribution. He noted the organization of special societies, of ophthalmologists, otologists, gynecologists, dermatologists, public health officers, laryngologists, surgeons and pathologists. Thus the rise of specialization had been exceedingly rapid. It was Dr. Brodie's opinion that nothing could be gained by changing the nature of the American Medical Association to resemble that of the British Medical Association with its branches. He forecast a feeble reception for the report of the committee of the ninth International Medical Congress and he pleaded with those who had fought the committee to give it their full support.

Apparently the spade work preliminary to the convention had been well done. The report of the committee was, on motion, received and adopted with enthusiasm and without an audible negative vote by the entire convention with almost a thousand delegates in the hall. Indeed the editor of The Journal was delighted to report complete harmony, whereas two months previously every one seemed to be sharpening his knife in readiness for the conflict.

The committee on organization of the International Medical Congress in 1887 made its report suggesting the name of N. S. Davis of Chicago for president and John B. Hamilton of Washington, D. C., as secretary general. The vote was recorded as unanimous. A motion offered by a Pennsylvania delegate to reconsider this motion was laid on the table.

At this session of the Association an amendment was adopted that each section should nominate its own officers. The establishment of a section on dermatology and syphilis was approved.

The business committee, acting as a reference committee, endorsed the views of the President that all papers read in the annual session should become the exclusive property of The Journal; it asked the Judicial Council to take action against members who introduced proprietary remedies and appliances. It recommended the appointment of a committee to study reorganization of the Association. A resolution was adopted that the Association approve cremation or incineration of the dead as a sanitary necessity in all populous cities.

The meeting was notable for the presence of General William Tecumseh Sherman, who entered the room and sat on the platform during the fourth day of the session.

The Trustees reported on The Journal and then asked Dr. N. S. Davis to make an individual report. Dr. Davis expressed his dissatisfaction with the income from advertising and some defection in subscribers. These included, first, those disaffected by the New York New Code party and later the opponents to the organization for the International Medical Congress. Notwithstanding these defections there had been a total increase in members and subscribers. Dr. Davis had consented to remain as editor, and the Trustees expressed their confidence that the experiment in publishing The Journal was fully warranted and that some day it would prove that their experiment was sound.

The difficulties over delegates in this convention were thoroughly analyzed by the Judicial Council, which made its report on the final day of the session. The delegates from tristate societies were considered not entitled to admission, since the Association recognized only the state societies and the county, district and local societies affiliated with the state societies. It asked the Davidson County Medical Society in Tennessee to show up next time with some credentials which would prove its connection with the Tennessee State Medical Society. The evidence against the Mississippi Valley State Medical Society was found insufficient for consideration. The Judicial Council found also that the delegates from the Philadelphia County Medical Society had been elected by methods which were of such an irregular character that the delegates would have to be rejected. The Judicial Council authorized the return of the dues of these delegates.

When the meeting was over and the delegates had returned home, the *Medical Record* of New York published some editorial comments calculated to create the impression that this meeting of the American Medical Association was not really representative and that the action of the Judicial Council relative to the delegates from Philadelphia had started a serious split in the American Medical Association. To this the *Philadelphia Medical and Surgical Reporter* replied "It is hardly fair to speak of a split when only a few fibers are carried away; it would be more correct to say a shave or a scrape. The main body of the American Medical Association is today more united than it ever was, and it has lost the allegiance only of those who 'got mad' because they could not control." The editorial in The Journal of the American Medical Association proves that the attendance was most representative and that there was little danger that a proposed congress of American specialists "constructed from a union of half a dozen American specialist organizations could take the place of the Association."

1887

CHICAGO

In January 1887 the students of the Chicago Medical College presented N. S. Davis, in honor of his fifty years in medical practice, with an armchair and a revolving bookshelf. Such a piece of furniture as the revolving bookshelf is still found in one of the offices of the headquarters of the American Medical Association and is probably the very one which was presented to N. S. Davis at that time. In the history of medicine such gifts represent one of the finest amenities in medical relationships. In the same year Dr. J. Adams Allen, commonly known as "Uncle Allen," was presented by the students of Rush Medical College with a "tripod" consisting of a fat, chubby hand, made of solid gold. It was set on an onyx pedestal on which was inscribed:

UNCLE ALLEN'S TRIPOD

Remember these three
When we practice the art:
The condition of blood,
The nerves, and the heart.

This quotation was a verse of the college song at Rush based on some of Dr. Allen's sayings. The hand was in the position that he usually held when addressing the students.

The editorials in The Journal were increasingly devoted to scientific subjects, with less attention to problems of organization and representation. Dr. Davis was disturbed by the unsatisfactory reporting of the discussions in the sections, urging the reporters to give in greater detail the statements made by those who discussed the individual papers.

A SPECIAL ISSUE OF THE JOURNAL

As the time approached for the annual session, The Journal issued a special number in an extra large edition giving the program of the meeting and full information as to its various features. Members of the Association were requested to visit the publication office to see how well The Journal was getting along, and the members were promised four more pages of reading matter with each issue during the coming year.

As the time neared for the meeting of the Association, the members were again reminded that the business office at 65 Randolph Street was open at all times and that a clerk would be present at all times to welcome them. The Journal printing office was at 68 Wabash Avenue, only one square from the Central Music Hall, where the Association was to meet and where extra volumes of the Transactions published prior to 1883 were to be found for sale.

The President of the Association, Dr. Elisha H. Gregory, read an address on "Cell Antagonism" which differed from every previous address in being a highly technical review of knowledge of the cell. He concluded his address by calling attention to the near approach of the International Medical Congress and by requesting all members of the American Medical Association to participate and entertain properly the numerous delegates from abroad.

The Board of Trustees reported that The Journal had been well published with the operation of its own press and that Dr. N. S. Davis had consented to continue its management. The Association now owned several fonts of type. There seemed to be a small increase in its subscription, but this was due to the fact that 524 subscribers had been added while 244 had been removed for nonpayment and for other reasons, including death.

Again attention was called by N. S. Davis to the fact that the Code controversy in New York and the battle over the International Congress had resulted in considerable damage to the Association's membership. However, these two revolts had spent their force and there had been recently increased applications for membership and renewals of subscriptions—more, in fact, than at any previous time since The Journal had been established. Dr. Davis urged again an expansion of The Journal printing office and he gave credit particularly to Dr. William G. Eggleston as assistant in editorial work and to Mr. J. Harrison White, who was both foreman and printing office and advertising manager.

CHANGES IN ORGANIZATION

Most important at this session of the Association was the report of the special committee on changes in the plan of organization and by-laws. The proposed amendments included changes in the technic of choosing members, the elimination of the nominating committee and the substitution of a general committee, the elimination of the committee on publication and the substitution of the Board of Trustees, the choice of chairmen in the individual sections by election in the sections and the new method for choosing those who were to give the annual addresses in the sections. The report of the committee was adopted. As an indication of the difference of opinion, however, a standing vote was taken on the adoption of this reorganization and the final vote was 274 for and 232 against. A roll call of the states established a committee on nominations with a representative from each state.

THE RUSH MONUMENT

An extensive report was presented by the Rush monument committee including a statement by its secretary and by its treasurer. The committee had made a very minor start on the total of $45,000 which it had started to collect. The total sum which had been sent to the treasurer was $389, and the committee had spent $143.08 on its expenses.

THE ANNUAL DINNER

As this session neared its end, several resolutions were offered which were again fundamental to the progress of the Association. One had to do with the holding of an annual dinner in which there were to be two kinds of tickets, one without wines or liquors and one with wines or liquors, so that any members of the Association could come to the dinner and not drink without feeling that he was paying for the liquor that was drunk by others. This resolution was adopted by a large majority.

THE FINANCIAL CONTROL

A resolution was offered appropriating an honorarium of $300 to the permanent secretary. To this Dr. Davis offered an amendment to the effect that the Board of Trustees be a standing committee on finance to which all propositions for the appropriation of money should be referred and reported on before final action on the same by the Association. This simple resolution, which arose out of a motion to pay a small honorarium to the permanent secretary, was probably more significant in the financial prosperity of the American Medical Association as it exists today than any other action taken up to that time.

1888

CINCINNATI

The first volume for the year 1888 indicates that THE JOURNAL was edited for the Association by N. S. Davis, assisted by William G. Eggleston and N. S. Davis Jr.

A NATIONAL DEPARTMENT OF HEALTH

Early in the year THE JOURNAL began to agitate for a national department of health, with particular reference to a national department for the control of adulteration of foods. This, it must be remembered, was 1888. The United States does not yet have a national department of health, although it has the U. S. Public Health Service. It required the action of Theodore Roosevelt and the publication of books by Samuel Hopkins Adams called "The Great American Fraud" and by Upton Sinclair called "The Jungle" to obtain a national law that would regulate the purity of foods and drugs.

THE GENERAL MEETING

Arrangements began to be made for the next meeting of the Association in which the addresses of the chairmen would be read before the sections rather than before the general assembly. However, arrangements were made for three important addresses before the entire assembly, forecasting the modern period with the general scientific meetings, in which three complete sessions are given over to general statements reflecting the advancement of medical science.

RIGHTS OF A DOCTOR IN HIS CLINIC

The editor of THE JOURNAL was also a little annoyed because medical reporters had begun attending clinics in hospitals and selling them to Eastern medical journals. Indeed, one reporter had annoyed the editor considerably by selling three of the editor's lectures in this manner without even allowing him to see the reports as first transcribed or to read the galley proofs. A Chicago judge gave a bench opinion to the effect that such activities were illegal and that redress could be had by resort to the courts for this piracy of medical literary material.

KNOWLEDGE OF DIPHTHERIA

An editorial in the issue for March 31, 1888 pointed out that a member of the Association disagreed with the editor, who had said that diphtheria was a preventable disease. He asked the editor to explain how he would go about preventing diphtheria. The editor, after some elusive discourse on the subject, said that "diphtheria, erysipelas, cholera, yellow fever and some other diseases evidently depend on specific infections developed outside the human being and capable of being introduced into it in connection with the air we inhale or the food and drink we take. Hence our formula for the prevention of diphtheria does not consist of drugs to be obtained at the apothecaries, but of an abundance of pure air, good water, wholesome food, clean soil, and a clear personality." In the light of modern use of antidiphtheria toxoid, this formula can be viewed only with praise for its sincerity. Just a few weeks passed until the editor had to write on the subject again. A member had suggested that probably isolation and disinfection should have been mentioned. Here the editor did a brilliant piece of open field running by pointing out that any family that was as clean as he had proposed would have nothing to isolate or disinfect. It was his idea that isolation and disinfection are performed only after infection has already occurred and that therefore they have little to do with the prevention of infection.

DRESS REFORM

About this time a prominent German professor became convinced that gallstones and tight lacing had a definite relationship. The editor of THE JOURNAL rather doubted that there was a true causal relationship but he was inclined to think that perhaps it was just frequent coincidence. He pointed out that the tight lacing goes on during the day and is loosened up at night. However, he felt that persistent tight lacing could cause a change in the configuration and that probably after all some cases of gallstones and perhaps also cancers of the gallbladder were due to tight lacing. Incidentally, a few pathologists had found the liver completely deformed by the tight stays of the corset of that day. It is not surprising then to find that Dr. Helen L. Betts of Boston read a paper before the Gynecological Society of Boston in December 1887 on the dress of woman and its relationship to the etiology and treatment of pelvic disease. Dr. Helen Betts was an advocate of dress reform. She wanted women to get rid of all the clinging garments with which their bodies were enveloped and she wanted them to get some exercise and outdoor life similar to that permitted to boys. She attributed congestion of the internal organs of women to their clothing and their habits. She cited a case from her own practice in which she felt that this was the primary trouble:

> The first, clearest indication seemed to remove the superincumbent pressure; so, as usual, I examined her mode of dress. You will be interested from a professional standpoint to know what this patient wore. I examined her at her home, so she had on simply her indoor garments. There were knit and muslin drawers, flannel and muslin underskirts, hoopskirt and

> bustle, then a muslin and a dress skirt, seven bands; fourteen thicknesses were buttoned closely about the corset, and, not long before, her physician, having noticed that she wore her garters about her legs, said he feared they would interfere with circulation and advised that she should put an elastic band about the waist and fasten the stockings to this! I asked if her clothes were not oppressive. She said she thought she wore very light clothing but had noticed at night a purple crease about the waist where the bands came about the corset and wondered if that could keep her from gaining strength. With all this weight and compression this poor woman was waiting to get well, wondering why she could not stand, that her limbs ached and prickled, and why she could not walk without getting so tired. Neither physician nor specialist had spoken of her mode of dress.

And Dr. Betts went further by pointing out that the men doctors simply did not know about these things because the men themselves had never submitted to that kind of clothing.

The meeting in Cincinnati heard an address by Dr. A. P. Y. Garnett which was a fine analysis of the medical education of the day, a brief review of the International Congress and an urge to participate in the building of the Rush monument.

The editor of The Journal told his readers that he would have the official minutes in the following week and he begged them to disregard the inaccurate, hasty and imperfect reports of the meeting that had been published by the contemporaries. The personal journalism which was characteristic of that day had invaded the field of medical journalism. Dr. Davis was much annoyed with the telegraphic reports from the convention in Cincinnati to the New York medical periodicals. He did not see the reason for all the hurry. "No one," he said, "can possibly object to an accurate report of the business meeting of the Association, but as the matter now is, it usually takes some months to correct the inaccuracies of one week's issue of some of our electric contemporaries. Inaccuracy is neither condoned nor corrected by telegraph wires, notwithstanding the marvelous therapeutic properties of electricity."

"PATENT" MEDICINE ADVERTISING

At this meeting there came a resolution from the Arkansas State Medical Society condemning the religious press of the nation for its continuous endorsement of "patent" medicines and the fact that the religious press published "serious homilies on prayer and praise side by side with cures for consumption, cancer, Bright's disease and other incurable ailments."

THE RUSH MEMORIAL

The committee on the Rush memorial reported that it knew that every doctor wanted to give a dollar but that the dollars had not been forthcoming and that they had not found out how to get them. The committee, which had started out to get $45,000, had got $392 the first year and $498 the second year but it had now had an expenditure since the last report of $34.73. Some of the state medical societies had made contributions—notably $500 from Pennsylvania—which had paid $100 on account, and $100 had been promised from Michigan but had not yet shown up in the treasury.

TOO MANY SOCIETIES

As the year ended there began to be agitation against the number and variety of medical societies. The difficulty seemed to lie in having too many special societies which were detracting from the national organization. These special societies were apparently not only taking away the harmony from the national organization but also interfering with pronouncements of policy. The *New Orleans Medical and Surgical Journal* of November 1888 said:

> What will be the final effect upon the American Medical Association of the various associations of so-called *specialists*—the American Surgical Association, the Association of American Physicians, the Gynecological Association and all the others? It will be a sad day for the profession of America when the time-honored A. M. A. ceases to be *the* medical institution of the country.

Dr. N. S. Davis charged that those who had taken part in one or more of these specialists organizations and who had actively promoted the combination of all these in the so-called Congress of American Physicians and Surgeons had been actuated by the desire that the latter should ultimately displace and supersede the American Medical Association. He felt that the leaders in the specialties had never been satisfied with the liberal organization of the American Medical Association. Some of them had tried to restrict the whole business and management of the Association to a council of limited number capable of self perpetuation instead of the representative plan based on the state and local societies. He attacked these specialists for devoting themselves to their special societies rather than giving the major portion of their attention to the sections of the American Medical Association. Too, he was certain that after all the sections of the American Medical Association would triumph because the specialists must depend for much of their patronage on personal contact with the general practitioners and he concluded:

> Instead of the circle of American associations of specialists, accommodating in the aggregate less than 500 of the 50,000 or 60,000 members of the regular medical profession of the United States, having any serious tendency to supersede the American Medical Association, it will only serve as a convenient and really useful place in which the small but respectable class of exclusionists can work and dine without personal contact with the sunburned and weatherbeaten general practitioners of the healing art.

In The Journal of the American Medical Association for Nov. 24, 1888, appears this significant notice:

> *EDITORIAL CHANGE*
>
> Having accomplished all that he had hoped or expected to accomplish when he accepted the editorship of The Journal of the American Medical Association in 1883, and feeling the necessity for diminishing his responsibilities and constant work, the Editor of The Journal tendered his resignation to the Board of Trustees in the latter part of June last, the same to take effect on the 31st day of December 1888. At a special meeting of the Board of Trustees held in Chicago Nov. 9 and 10, 1888 the resignation was accepted, and John B. Hamilton, M.D., Supervising Surgeon General of the Marine Hospital Service and late Secretary General of the ninth International Medical Congress, was chosen unanimously to fill the place. He will enter upon the discharge of his editorial duties Jan. 1, 1889. We trust he will have a long and prosperous editorial career.

Thus apparently ended the visible leadership of Nathan Smith Davis. But it was only apparent! A study of the minutes of the Association and of the Board of Trustees during the continuing years proved that, as long as there was in him spirit and life, N. S. Davis was wholly devoted to the American Medical Association and its progress.

1889

NEWPORT, R. I.

Prophetic indeed was a little note that appeared in the editorial column of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for Jan. 12, 1889. It said:

> There are a little more than eighty thousand persons practicing medicine in the United States, of whom more than sixty thousand are regular practitioners. When one third of the regular profession are members of the American Medical Association we can have the strongest organization and the best medical journal in the world.

As the Association faced its hundredth anniversary in 1947, there were about 190,000 physicians in the United States, and of these about 130,000 were members of the American Medical Association. THE JOURNAL had reached more than 130,000 subscribers, a figure representing more circulation than the ten next weekly journals of medicine in the world combined.

In 1889 the British Medical Association was in excellent financial condition. It occurred to the editor of THE JOURNAL to make some comparisons and to point out that a technic like that by which the British Medical Association was organized would be of vital importance to promotion of THE JOURNAL. Yet from various places in the United States came a variety of suggestions, one urging frequent meetings in Washington and the beginning of the first agitation for moving the headquarters of the American Medical Association to that city. The suggestion has never quite died. Again and again it reappears in the various motions and promotions frequently supported by the belief that in some manner the location of the headquarters of the American Medical Association in Washington would result in a sort of influence on the legislative and executive leaders that cannot be secured by any less intimate contact.

THE EDITOR OF THE JOURNAL

It will be remembered that the Board of Trustees of the American Medical Association accepted the resignation of Dr. N. S. Davis at the end of 1888. Dr. John B. Hamilton was elected to succeed him. He served as editor only from January to February of 1889; then he resigned the position for reasons which he stated succinctly in an editorial published in the issue of February 9. At that time the committee on general management, which was the Board of Trustees, took over control of THE JOURNAL.

EDITORIAL NOTICE

> When the writer accepted the position of Editor of the Association JOURNAL, although the Marine Hospital Service bill was then pending, as it had been for the past ten years, he had no certainty of its passage, but, on January 4 it passed both houses of Congress and became a law, which by prohibiting any original appointments into the service except to the rank of Assistant Surgeon, has the effect of creating a life tenure in the office of Supervising Surgeon General. He therefore tendered his resignation as Editor to the Board of Trustees and it was kindly accepted by them to take effect on a day named by himself. His editorial connection with THE JOURNAL will therefore cease with the present number, and until further notice the "Committee on General Management" will take charge of the affairs of THE JOURNAL. With the most sincere thanks to those who have sent him kindly letters, his best wishes for the continued success of THE JOURNAL, and the renewed prosperity of the Association, the Editor assumes his life work in the Marine Hospital Service.
>
> JOHN B. HAMILTON.

John B. Hamilton was born in Jersey County, Ill. Dec. 1, 1847, the year in which the American Medical Association was founded. He graduated from Rush Medical College in 1869. Following his graduation he entered the Marine Hospital Service and rose rapidly to the rank of Supervising Surgeon General. His surgical skill won for him a position in Rush Medical College, where he became professor of the principles of surgery and clinical surgery. He obtained special recognition for his operations for hernia and for his skill in surgical diagnosis.

In "American Medical Biographies," edited by Howard A. Kelly and Walter L. Burrage, appears the statement that THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION was never more successful than under his four years of editorship. His second term as editor began in 1893. This first period occupied just two months.

In 1889 Dr. Oliver Wendell Holmes gave his private library to the Boston Medical Library. THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION recognized the occasion with special editorial notice and suggested to the members of the Association that they might have opportunity to meet the great American author and physician at the next meeting of the Association, which was to take place in Newport, R. I.

PROGRESS IN OBSTETRICS

Significant of the progress of medical science in that year was a lecture given to the Chicago Medical Society by Professor W. W. Jaggard of the Chicago Medical College. Jaggard was one of the greatest teachers of his day. Dr. Joseph B. De Lee derived from him the interest toward improvement in obstetrics which became his life work. The article on "The Prevention of Puerperal Fever" is a demand for thoroughgoing cleanliness which came closely on the demonstrations by Semmelweis and the argument of Oliver Wendell Holmes. Curiously, however, at the conclusion of his article Dr. Jaggard warned physicians to make sure that the woman who was giving birth should not be placed in a room in which there was "communication with the sewer, since vitiated air is unwholesome under all conditions of human life." He called attention, however, to an aphorism of Kucher, "I would be less frightened by the bursting of a sewer pipe during labor than by the use of a suspicious sponge or an unclean rag on the external genitals." And as a final conclusion, Dr. Jaggard said "These rules are simple and easy of application as well in private as in hospital practice; as well on South Halsted Street as on Calumet Avenue." It would interest Professor Jaggard, should he return today, to discover that South Halsted Street has now improved considerably over Calumet Avenue!

Following the resignation of Dr. John B. Hamilton, THE JOURNAL was issued by the Board of Trustees with the advice of N. S. Davis until June 26, when Dr. John H. Hollister of Chicago was elected editor.

PROGRESS OF THE ASSOCIATION

Toward the end of the year THE JOURNAL began a campaign for better control over licensure to practice in the individual states. The editor published a brief review of forty years in the history of the American Medical Association and he listed the following five chief accomplishments of those forty years:

> "First. By the early adoption of a Code of Ethics which commends itself to the approval of all medical men, it has

clearly defined the rules that should govern, not only among members of the profession, one with another, but also their relations with the people.

Second. It has fostered fraternal fellowship and helped to bring into close and friendly relation the medical men of all parts of this broad Union.

Third. It has always been the earnest advocate of a higher standard of medical education and in every way possible has sought to stimulate original investigation.

Fourth. Its influence has always been helpful to our medical colleges—and it has favored the maintenance of medical societies, both state and local, everywhere.

Fifth. For the purpose of assuring the closest possible relations with the masses of the profession—it even commits its own management to their delegates, as they shall come fresh from the local societies to express their will, from year to year, rather than to permanent members, who might in time misrepresent their constituencies.

The Association is in accord with the genius of American institutions. It is national in its representation and never sectional in interests. It is in no sense exclusive and yet makes ample provision for those who by reason of talent and culture may best serve the profession as instructors and guides. . . . "

In June the editor discovered that some one, taking advantage of the forthcoming annual session of the American Medical Association, began soliciting advertisement for something called "The American Medical Association Annual." It became necessary for the Association to disavow publicly any association with this dubious financial enterprise.

THE SPECIAL ISSUE

The Journal itself was, however, embarking on a financial enterprise to signalize the occasion that amazed the American medical publishing world. In anticipation of the 1889 convention The Journal of the American Medical Association issued an edition of 75,000 copies and mailed one to every physician in the United States. Its purpose was to attract a large number of physicians to the annual meeting in Newport. The other medical periodicals of the country paid compliments to the special issue. One contemporary called attention to the fact that The Journal was under temporary management and suggested that the Association could scarcely do better than to make the present arrangement permanent.

The final issue of the twelfth volume carried a plea for the sufferers from the Johnstown flood.

The next volume opened with the address of the President of the Association, Dr. W. W. Dawson of Cincinnati. He was concerned with the quality of medical teaching in the United States; with the quality of the young men who were to become medical students; he recognized that there would always be some doctors who were not as good as most of them. The University of Texas had just been liberally endowed. The universities of Virginia, Harvard, Yale, Princeton, Columbia and Cornell and the University of California had made enviable records, but there were now in the United States more than a hundred medical colleges and there was a feeling that medical colleges had increased too rapidly.

President Dawson urged an expansion of The Journal of the American Medical Association and a drive for more members. Great praise he poured on the Army Medical Library and Museum and on John Shaw Billings and his development of the *Index Catalogue*. "The medical profession," he said, "asks very little of the general government but it does ask that these two institutions shall be made as useful as possible." He saw looming as clouds on the horizon the gradual development of proprietary "patent" medicines which were in every sense of the word nostrums. He saw failure of states to set up systems of licensure as rapidly as they were needed.

The meeting in Newport was marked by many interesting features. Dr. William Pepper of the University of Pennsylvania gave the address on medicine and devoted it to the life of Benjamin Rush, but the treasurer of the Rush monument committee could only report a total of $1,000, and it was decided to abandon the $1 limit on subscriptions.

The Board of Trustees of the American Medical Association made its report on The Journal, recognizing that it had now become well established and a credit to the Association. At the beginning of the year the number of pages of The Journal had been increased from thirty-two to thirty-six weekly.

The American Social Science Association sent in a resolution, which was adopted, urging a more thorough general education antecedent to the study of medicine.

After the reading of the report of the Board of Trustees, the minutes show that Hon. George Bancroft, famous as a historian, entered on the stage and was presented to the members who arose to receive him.

At that time the resolution was adopted that the American Medical Association should send its representatives to the meeting of the U. S. Pharmacopeial Convention.

BROWN-SÉQUARD AND REJUVENATION

Among the extraordinary manifestations of our civilization is the manner in which a noted scientist who has gained great fame may suddenly hazard all his repute by some sudden aberration as he grows older. This occurred to the great Brown-Séquard, who suddenly claimed that he had discovered the secret of perennial youth and of rejuvenation. The Journal of the American Medical Association had recorded his utterances as too absurd to warrant serious consideration, but his ideas began to gain great public interest. The Journal then announced the report of a citizen who had met sudden death by attempting to rejuvenate himself by the Brown-Séquard technic.

ORGANIZATION

Still experimenting with methods of organization, there was now an attempt to gain strength and support for the American Medical Association by promoting reorganization with branches and societies similar to those of the British Medical Association. It was hoped that the districts and tristate and similar groups could be incorporated into the American Medical Association in some manner so as to assure a great membership with a vast subscription to The Journal. At the same time the California State Medical Association passed a resolution demanding that the one qualification necessary for membership should be continuous membership in a local medical society. This was the principle which was ultimately to prevail.

(To be continued)

Clinical Notes, Suggestions and New Instruments

TRAUMATIC CHYLOTHORAX RESULTING FROM BATTLE INJURY

LIEUTENANT COLONEL WILLIAM H. BERRY
Medical Corps, Army of the United States

Chylothorax is not a common condition. According to Brescia [1] it was first described by Bartolet in 1633. Jahsman [2] in a review of the literature extending up to 1942 was able to find only 102 cases. He reported 3 additional cases, bringing the total number to 105.

The following are the classifications of chylothorax: (1) traumatic; (2) obstructive or nontraumatic: (*a*) intraductile obstruction due to new growth, filaria or Hodgkin's disease, and (*b*) extraductile obstruction due to mediastinal tumors, tuberculous glands or aortic aneurysm; (3) associated diseases such as thrombosis of the subclavian vein, and (4) spontaneous.

The presence of a chylothorax is obvious when the pleura is perforated, as in the traumatic cases, but is difficult to explain when it is intact, as in the obstructive cases. The flow through the thoracic duct is only 4 mm. per second, and the pressure at its exit into the vein is less than the venous pressure. Curtis [3] quoted Sahli as advancing the theory that it passes through the lymphangiectasis by diapedesis. The passage of lymph might also be explained as being due first to diffusion or transudation, and second to rupture of dilated lymphatic vessels. This latter would appear to be a better explanation.

The spontaneous group of chylothorax occurs in children under 1 year of age and may be due to some congenital anomaly or atresia in the lymphatic system.

The case herein reported belongs to the traumatic group and is to my knowledge the only one in the military literature from the present war.

REPORT OF CASE

An infantryman aged 28 was wounded by an 88 mm. shell Nov. 17, 1944 in Germany. He was admitted to an army hospital with a pulse rate of 120 and blood pressure 70 systolic and 50 diastolic; he was in acute respiratory distress.

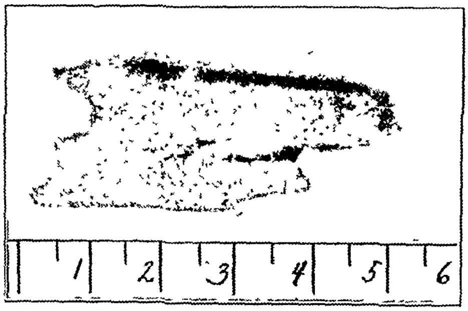
Physical examination revealed considerable emphysema over the upper part of the chest and neck. Percussion of the left side of his chest was dull, and there were diminished breath and voice sounds. The heart and mediastinum were not displaced. A roentgenologic examination of the chest revealed a fracture of the third rib anteriorly on the left side and a hemothorax. It also revealed a large shell fragment in the left side of the upper part of the chest. His left lung was aspirated and 600 cc. of blood was obtained. He was given a transfusion of 1,000 cc. of blood. His condition improved and the blood pressure stabilized at 110 systolic and 80 diastolic, but he continued to have respiratory distress and to need oxygen. Because of these symptoms and the large size of the missile, it was decided to perform a thoracotomy. This was done and the upper lobe of the left lung was found to have a laceration 2 inches (5 cm.) long, to be partially collapsed and to contain a moderately sized hematoma. A foreign body 2 by 5 by 5 cm., as shown in the accompanying illustration, had lodged in the posterior thoracic wall in the angle between the subclavian artery and the arch of the aorta. The missile was wedged tightly in the posterior wall of the chest. It had sharp, rough edges and was pressing firmly against the aorta and the subclavian artery. It appeared that the fragment might slough through these vessels if it was not removed, but there was also the danger that its removal might start a hemorrhage. Considerable traction had to be exerted to effect its removal, but hemorrhage did not occur. The laceration in the lung was sutured, the fractured rib ends were smoothed, blood clots were removed and the chest was closed.

The patient's condition remained good until forty-eight hours after the operation. By this time sufficient fluid had accumulated in the chest to cause dyspnea. A thoracentesis was performed and 800 cc. of milky, blood-stained fluid was removed. This was repeated forty-eight hours later, and 1,000 cc. of clear milky fluid was obtained. This was proved by laboratory examination to be chyle. One thousand cubic centimeters of chyle was obtained each day for the next eight days, after which the accumulation rapidly diminished. Five hundred cubic centimeters was obtained on the tenth day, and 75 cc. on the fourteenth day. During this period the patient lost 15 pounds (6.8 Kg.) and complained of considerable weakness. Recovery of weight and strength were rapid, and the patient was evacuated on his twentieth postoperative day.

The fluid obtained at the second tapping of the chest was strongly positive on examination for fat. The specific gravity was 1.020, the sugar content was 142.8 mg. and the nonprotein nitrogen 12 mg. per hundred cubic centimeters. A sample from the last tapping was examined, and the only change was a sugar of 76 mg. per hundred cubic centimeters. His blood chemistry was within normal limits. The hematocrit reading was taken five times, and the results ranged from 42 to 47.

COMMENT

It is interesting to note that the amount of chyle became decidedly less between the eighth and the tenth day. Lee [4] has shown that a fairly extensive collateral circulation becomes established between seven and eight days after the ligation of the thoracic duct, an observation which appears to be substantiated by this case.



Foreign body (2 by 5 by 5 cm.) removed from thoracic wall.

Wright [5] has expressed the opinion that lymph from the liver contains 6 per cent of protein as compared to 4 per cent in that from the intestine and 2 per cent in that from the legs, and that during starvation, there is at first a slight fall in the levels of blood sugar and proteins, but these soon become stabilized and remain so until near the end. He stated that the liver is reduced to 54 per cent of its bulk, the muscles to 31 per cent and the spleen to 60 per cent. When one considers the large bulk of muscle tissue and the relatively large volume of liver that can be called on, it is easy to understand how this patient's blood chemistry remained normal for a period of ten days.

The amount of chyle and lymph flowing through the thoracic duct is estimated to be between 50 and 120 cc. per hour. The patient lost about 1,000 cc. per day, which would roughly represent his total quantity from this source. He consequently must have been sustained from stored bodily reserves, and the liver and muscles seem to be the most likely sources.

The treatment of chylothorax is mainly supportive. Plasma should be given daily in amounts equivalent to the loss of chyle, and the fluid balance should be maintained. Intravenous infusions of the chyle from the chest of this patient were being considered when the drainage stopped. Surgical intervention

---

[1] Brescia, M. A.: Chylothorax: Report of Case in Infant, Arch. Pediat. **58**: 345-356 (June) 1941.

[2] Jahsman, W. E.: Chylothorax. Brief Review of Literature, Ann. Int. Med. **21**: 669-678 (Oct.) 1944.

[3] Curtis, G. M.: Lymphatic System, in Christopher, F.: Surgery, ed. 3, Philadelphia, W. B. Saunders Company, 1942, chap. 10.

[4] Lee, F. C.: The Establishment of Collateral Circulation Following Ligation of the Thoracic Duct, Bull. Johns Hopkins Hosp. **33**: 21-31 (Jan.) 1922.

[5] Wright, S.: Applied Physiology, ed. 7, London, Oxford University Press, 1940, pp. 470 and 689.

> clearly defined the rules that should govern, not only among members of the profession, one with another, but also their relations with the people.
>
> Second. It has fostered fraternal fellowship and helped to bring into close and friendly relation the medical men of all parts of this broad Union.
>
> Third. It has always been the earnest advocate of a higher standard of medical education and in every way possible has sought to stimulate original investigation.
>
> Fourth. Its influence has always been helpful to our medical colleges—and it has favored the maintenance of medical societies, both state and local, everywhere.
>
> Fifth. For the purpose of assuring the closest possible relations with the masses of the profession—it even commits its own management to their delegates, as they shall come fresh from the local societies to express their will, from year to year, rather than to permanent members, who might in time misrepresent their constituencies.
>
> The Association is in accord with the genius of American institutions. It is national in its representation and never sectional in interests. It is in no sense exclusive and yet makes ample provision for those who by reason of talent and culture may best serve the profession as instructors and guides. . . . "

In June the editor discovered that some one, taking advantage of the forthcoming annual session of the American Medical Association, began soliciting advertisement for something called "The American Medical Association Annual." It became necessary for the Association to disavow publicly any association with this dubious financial enterprise.

THE SPECIAL ISSUE

THE JOURNAL itself was, however, embarking on a financial enterprise to signalize the occasion that amazed the American medical publishing world. In anticipation of the 1889 convention THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION issued an edition of 75,000 copies and mailed one to every physician in the United States. Its purpose was to attract a large number of physicians to the annual meeting in Newport. The other medical periodicals of the country paid compliments to the special issue. One contemporary called attention to the fact that THE JOURNAL was under temporary management and suggested that the Association could scarcely do better than to make the present arrangement permanent.

The final issue of the twelfth volume carried a plea for the sufferers from the Johnstown flood.

The next volume opened with the address of the President of the Association, Dr. W. W. Dawson of Cincinnati. He was concerned with the quality of medical teaching in the United States; with the quality of the young men who were to become medical students; he recognized that there would always be some doctors who were not as good as most of them. The University of Texas had just been liberally endowed. The universities of Virginia, Harvard, Yale, Princeton, Columbia and Cornell and the University of California had made enviable records, but there were now in the United States more than a hundred medical colleges and there was a feeling that medical colleges had increased too rapidly.

President Dawson urged an expansion of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and a drive for more members. Great praise he poured on the Army Medical Library and Museum and on John Shaw Billings and his development of the *Index Catalogue*. "The medical profession," he said, "asks very little of the general government but it does ask that these two institutions shall be made as useful as possible." He saw looming as clouds on the horizon the gradual development of proprietary "patent" medicines which were in every sense of the word nostrums. He saw failure of states to set up systems of licensure as rapidly as they were needed.

The meeting in Newport was marked by many interesting features. Dr. William Pepper of the University of Pennsylvania gave the address on medicine and devoted it to the life of Benjamin Rush, but the treasurer of the Rush monument committee could only report a total of $1,000, and it was decided to abandon the $1 limit on subscriptions.

The Board of Trustees of the American Medical Association made its report on THE JOURNAL, recognizing that it had now become well established and a credit to the Association. At the beginning of the year the number of pages of THE JOURNAL had been increased from thirty-two to thirty-six weekly.

The American Social Science Association sent in a resolution, which was adopted, urging a more thorough general education antecedent to the study of medicine.

After the reading of the report of the Board of Trustees, the minutes show that Hon. George Bancroft, famous as a historian, entered on the stage and was presented to the members who arose to receive him.

At that time the resolution was adopted that the American Medical Association should send its representatives to the meeting of the U. S. Pharmacopeial Convention.

BROWN-SÉQUARD AND REJUVENATION

Among the extraordinary manifestations of our civilization is the manner in which a noted scientist who has gained great fame may suddenly hazard all his repute by some sudden aberration as he grows older. This occurred to the great Brown-Séquard, who suddenly claimed that he had discovered the secret of perennial youth and of rejuvenation. THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION had recorded his utterances as too absurd to warrant serious consideration, but his ideas began to gain great public interest. THE JOURNAL then announced the report of a citizen who had met sudden death by attempting to rejuvenate himself by the Brown-Séquard technic.

ORGANIZATION

Still experimenting with methods of organization, there was now an attempt to gain strength and support for the American Medical Association by promoting [illegible] with branches and societies similar to [illegible] Medical Association. It was hoped that the districts and tristate and similar groups could be incorporated into the American Medical Association in some manner so as to assure a great membership with a vast subscription to THE JOURNAL. At the same time the California State Medical Association passed a resolution demanding that the one qualification necessary for membership should be continuous membership in a local medical society. This was the principle which was ultimately to prevail.

(To be continued)

Clinical Notes, Suggestions and New Instruments

TRAUMATIC CHYLOTHORAX RESULTING FROM BATTLE INJURY

LIEUTENANT COLONEL WILLIAM H. BERRY
Medical Corps, Army of the United States

Chylothorax is not a common condition. According to Brescia[1] it was first described by Bartolet in 1633. Jahsman[2] in a review of the literature extending up to 1942 was able to find only 102 cases. He reported 3 additional cases, bringing the total number to 105.

The following are the classifications of chylothorax: (1) traumatic; (2) obstructive or nontraumatic: (*a*) intraductile obstruction due to new growth, filaria or Hodgkin's disease, and (*b*) extraductile obstruction due to mediastinal tumors, tuberculous glands or aortic aneurysm; (3) associated diseases such as thrombosis of the subclavian vein, and (4) spontaneous.

The presence of a chylothorax is obvious when the pleura is perforated, as in the traumatic cases, but is difficult to explain when it is intact, as in the obstructive cases. The flow through the thoracic duct is only 4 mm. per second, and the pressure at its exit into the vein is less than the venous pressure. Curtis[3] quoted Sahli as advancing the theory that it passes through the lymphangiectasis by diapedesis. The passage of lymph might also be explained as being due first to diffusion or transudation, and second to rupture of dilated lymphatic vessels. This latter would appear to be a better explanation.

The spontaneous group of chylothorax occurs in children under 1 year of age and may be due to some congenital anomaly or atresia in the lymphatic system.

The case herein reported belongs to the traumatic group and is to my knowledge the only one in the military literature from the present war.

REPORT OF CASE

An infantryman aged 28 was wounded by an 88 mm. shell Nov. 17, 1944 in Germany. He was admitted to an army hospital with a pulse rate of 120 and blood pressure 70 systolic and 50 diastolic; he was in acute respiratory distress.

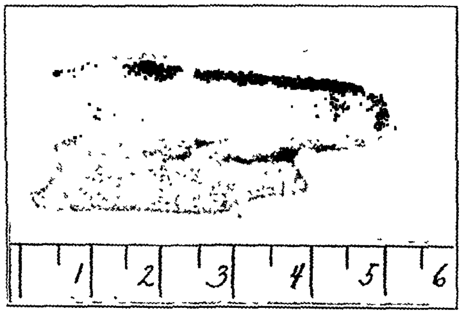
Physical examination revealed considerable emphysema over the upper part of the chest and neck. Percussion of the left side of his chest was dull, and there were diminished breath and voice sounds. The heart and mediastinum were not displaced. A roentgenologic examination of the chest revealed a fracture of the third rib anteriorly on the left side and a hemothorax. It also revealed a large shell fragment in the left side of the upper part of the chest. His left lung was aspirated and 600 cc. of blood was obtained. He was given a transfusion of 1,000 cc. of blood. His condition improved and the blood pressure stabilized at 110 systolic and 80 diastolic, but he continued to have respiratory distress and to need oxygen. Because of these symptoms and the large size of the missile, it was decided to perform a thoracotomy. This was done and the upper lobe of the left lung was found to have a laceration 2 inches (5 cm.) long, to be partially collapsed and to contain a moderately sized hematoma. A foreign body 2 by 5 by 5 cm., as shown in the accompanying illustration, had lodged in the posterior thoracic wall in the angle between the subclavian artery and the arch of the aorta. The missile was wedged tightly in the posterior wall of the chest. It had sharp, rough edges and was pressing firmly against the aorta and the subclavian artery. It appeared that the fragment might slough through these vessels if it was not removed, but there was also the danger that its removal might start a hemorrhage. Considerable traction had to be exerted to effect its removal, but hemorrhage did not occur. The laceration in the lung was sutured, the fractured rib ends were smoothed, blood clots were removed and the chest was closed.

The patient's condition remained good until forty-eight hours after the operation. By this time sufficient fluid had accumulated in the chest to cause dyspnea. A thoracentesis was performed and 800 cc. of milky, blood-stained fluid was removed. This was repeated forty-eight hours later, and 1,000 cc. of clear milky fluid was obtained. This was proved by laboratory examination to be chyle. One thousand cubic centimeters of chyle was obtained each day for the next eight days, after which the accumulation rapidly diminished. Five hundred cubic centimeters was obtained on the tenth day, and 75 cc. on the fourteenth day. During this period the patient lost 15 pounds (6.8 Kg.) and complained of considerable weakness. Recovery of weight and strength were rapid, and the patient was evacuated on his twentieth postoperative day.

The fluid obtained at the second tapping of the chest was strongly positive on examination for fat. The specific gravity was 1.020, the sugar content was 142.8 mg. and the nonprotein nitrogen 12 mg. per hundred cubic centimeters. A sample from the last tapping was examined, and the only change was a sugar of 76 mg. per hundred cubic centimeters. His blood chemistry was within normal limits. The hematocrit reading was taken five times, and the results ranged from 42 to 47.

COMMENT

It is interesting to note that the amount of chyle became decidedly less between the eighth and the tenth day. Lee[4] has shown that a fairly extensive collateral circulation becomes established between seven and eight days after the ligation of the thoracic duct, an observation which appears to be substantiated by this case.



Foreign body (2 by 5 by 5 cm.) removed from thoracic wall.

Wright[5] has expressed the opinion that lymph from the liver contains 6 per cent of protein as compared to 4 per cent in that from the intestine and 2 per cent in that from the legs, and that during starvation, there is at first a slight fall in the levels of blood sugar and proteins, but these soon become stabilized and remain so until near the end. He stated that the liver is reduced to 54 per cent of its bulk, the muscles to 31 per cent and the spleen to 60 per cent. When one considers the large bulk of muscle tissue and the relatively large volume of liver that can be called on, it is easy to understand how this patient's blood chemistry remained normal for a period of ten days.

The amount of chyle and lymph flowing through the thoracic duct is estimated to be between 50 and 120 cc. per hour. The patient lost about 1,000 cc. per day, which would roughly represent his total quantity from this source. He consequently must have been sustained from stored bodily reserves, and the liver and muscles seem to be the most likely sources.

The treatment of chylothorax is mainly supportive. Plasma should be given daily in amounts equivalent to the loss of chyle, and the fluid balance should be maintained. Intravenous infusions of the chyle from the chest of this patient were being considered when the drainage stopped. Surgical intervention has been advocated in the traumatic instances which do not close spontaneously. Dissection of the thoracic duct, however, is a difficult surgical operation and one that should be chosen only as a last resort.

---

[1] Brescia, M. A.: Chylothorax: Report of Case in Infant, Arch. Pediat. 58: 345-356 (June) 1941.

[2] Jahsman, W. E.: Chylothorax: Brief Review of Literature, Ann. Int. Med. 21: 669-678 (Oct.) 1944.

[3] Curtis, G. M.: Lymphatic System, in Christopher, F.: Surgery, ed. 3, Philadelphia, W. B. Saunders Company, 1942, chap. 10.

[4] Lee, F. C.: The Establishment of Collateral Circulation Following Ligation of the Thoracic Duct, Bull. Johns Hopkins Hosp. 33: 21-31 (Jan.) 1922.

[5] Wright, S.: Applied Physiology, ed. 7, London, Oxford University Press, 1940, pp. 470 and 689.

SUMMARY

1. One case of war injury to the thoracic duct in the angle of the aorta and subclavian artery is reported.

2. The foreign body was removed from this location, and the patient recovered after the subsidence of traumatic chylothorax.

3. Some of the physiologic observations in connection with chylothorax are the establishment of a collateral circulation between the eighth and ninth days and the maintenance of normal blood chemistry.

4. The causes of the four types of chylothorax are trauma, obstruction of the ducts, thrombosis of subclavian vein and spontaneous rupture. Treatment consists in giving plasma and maintaining the fluid balance of the body.

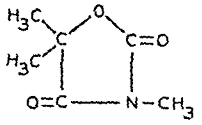
Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

TRIMETHADIONE. — Tridione — 3,5,5-Trimethyloxazolidine-2-4-dione — $C_6H_9NO_3$ — *M. W. 143.14.* The structural formula of trimethadione may be represented as follows:



Actions and Uses.—Trimethadione is primarily an anticonvulsant and has *only minor analgesic properties*. It is used in the treatment of epilepsy, in which it is principally effective in cases with seizures of the true petit mal type. Its results in this condition appear to be somewhat better in children than in adults. It is ineffective in grand mal. It is also useful in psychomotor epileptic seizures, especially with diphenyl hydantoin sodium when the latter alone is ineffective. It may be tried in myoclonic and akinetic seizures of organic origin but is generally less effective than *in the idiopathic forms* of the disease. It has been used with diphenyl hydantoin sodium and/or phenobarbital in cases in which attacks are complicated by grand mal seizures, but such use appears less rational and may in some instances serve to exaggerate the grand mal as the petit mal is decreased. It has been administered in solution by intramuscular injection to terminate attacks of status epilepticus, but such use is not of sufficiently established value to warrant recognition at the present time.

Toxic reactions to trimethadione appear to be relatively infrequent. Gastric irritation, nausea, skin eruptions, photosensitivity and blurring of vision with a diminution in visual acuity that is reversible may be encountered and are considered indications for temporary withdrawal or reduction in dosage of the drug. Photophobia appears to be less frequent in children than in adults. The skin manifestations that have been observed are not attributable to sensitization, and the visual disturbances have not been shown to be associated with optic nerve damage.

Rare cases in which aplastic anemia with a depression of all elements of the peripheral blood has occurred with the use of trimethadione indicate the need for repeated complete blood examinations in patients receiving this drug. It has been suggested that small initial doses be used and the patient cautioned to report at once any untoward symptoms that may ensue. Careful medical supervision of patients under treatment with trimethadione is essential. It should not be used in the presence of anemia, leukopenia or thrombocytopenia and employed with caution if at all in any type of blood dyscrasia.

It is contraindicated in patients with advanced renal or hepatic disease or with disease of the optic nerve.

Dosage.—*In petit mal epilepsy, the dosage required* may vary from 1 to 2 Gm. daily, given in divided doses of three to seven 0.3 Gm. capsules per day. In children under 6 years of age it is advisable to begin with 0.15 to 0.3 Gm. three times daily and to increase this if necessary. Optimum dosage must be determined *for each patient.*

Tests and Standards.—

Trimethadione occurs as a white, granular, crystalline substance possessing a slight camphor-like odor. It melts at 45-46.5 C. It is soluble in water and freely soluble in alcohol, in benzene, in chloroform and in *ether. The pH of a 5 per cent solution is about 6.0.*

Add 1 cc. of *one* normal barium hydroxide solution to 5 cc. of a 2 per cent aqueous solution of trimethadione: within *a few* seconds a considerable precipitate appears.

Add 3 cc. of 25 per cent *sodium* hydroxide to 0.5 Gm. of trimethadione. Heat for thirty minutes on a boiling water bath. Carefully evaporate the solution to 0.5 cc. over a free flame, during the *course* of which a heavy *precipitate* forms. Cool and carefully treat the residue with hydrochloric acid until the resulting solution is acid *to litmus*. Add 1 *drop of* ferric chloride solution to 10 drops of the aforementioned *solution*: a *deep yellow color* develops.

Extract the acid solution obtained as described in the preceding paragraph with three 10 cc. portions of ether. Decant the ether extracts *from* the residue *and combine all three ether fractions. Evaporate the* ether solution to dryness on the steam bath and then recrystallize *from* benzene: the *melting point* of the crystals is 79-81 C.

Accurately weigh about 10 mg. of the derivative *obtained* in the previous paragraph. Transfer to a 150 cc. beaker, add 3 drops of ethanol to *effect solution* and follow with about 25 cc. of water. Add two drops of phenolphthalein and titrate with one hundredth normal sodium *hydroxide*: the neutralization equivalent is within the limits 101-107.

Dry 0.5 Gm. of trimethadione, accurately weighed, over phosphorus *pentoxide for six hours*: the loss *does not exceed 0.1 per cent.*

Ash about 1.0 Gm. of trimethadione, accurately weighed: the amount of *residue is not more than 0.05 per cent.*

Weigh *accurately about 200 mg.* of trimethadione. *Dissolve in about* 5 cc. of alcohol and then add 25 cc. of water followed by 25 cc. of tenth-normal sodium hydroxide. Allow to stand for fifteen minutes, add 4 drops of cresolphthalein and titrate the excess alkali with tenth-normal hydrochloric acid. Each cubic centimeter of tenth-normal sodium hydroxide is equivalent to 0.014314 Gm. of trimethadione: the trimethadione content is not less than 98 per cent nor more than 102 per cent.

Trimethadione Capsules:

Weigh sufficient powder from ten capsules to contain about 100 mg. of trimethadione. *Transfer to a small beaker, add 5 cc. of 95 per cent* ethanol and allow to stand for five minutes. Decant the alcohol through filter paper previously moistened with alcohol. Repeat the extraction *with alcohol and filtration* twice more. Dilute the combined filtrates to four volumes with water. Add 20 cc. of tenth-normal sodium hydroxide to the solution, allow to stand for five minutes, add two drops of cresolphthalein and then *neutralize* the excess alkali with tenth-normal hydrochloric acid. Each cubic centimeter of tenth-normal *sodium hydroxide* is equivalent to 0.014314 Gm. of trimethadione: the trimethadione content is not less than 95 *per cent nor* more than 105 per cent of the claimed amount.

Trimethadione Solution:

Pipette *2 cc.* of trimethadione solution (*about 40 mg.* per cubic centimeter), add 50 cc. of water and then *20 cc.* of tenth-normal sodium hydroxide. Allow the trimethadione to hydrolyze for five minutes, add two drops of cresolphthalein and titrate the excess alkali with tenth-normal hydrochloric acid. Each cubic centimeter of tenth-normal sodium hydroxide used is equivalent to 0.014314 Gm. of trimethadione: the trimethadione content is *not less than 97.5* per cent nor more than 102.5 per cent of the claimed amount.

Abbott Laboratories, North Chicago, Ill.

Tridione Capsules: 0.3 Gm.

STREPTOMYCIN.—*Streptomycin is a purified active* principle produced by certain strains of Streptomyces griseus when they are grown on suitable mediums. It has the property of inhibiting the growth and of occasionally destroying certain gram-negative bacteria. It may be prepared as several salts, *including the hydrochloride and sulfate salts.*

Actions and Uses.—Streptomycin is an antibiotic agent. It is not a pure product but is marketed as a sterile powder in airtight ampules or vials, the activity in terms of milligrams or grams of pure streptomycin base being declared on the label. Streptomycin and its salts are reasonably stable but should be stored at a temperature not in excess of 15 C. Solutions of streptomycin are less stable than the dry powder and should always be kept in the refrigerator. *Only freshly prepared* solutions should be used parenterally.

Streptomycin is active in vitro against a wide variety of gram-negative organisms including such pathogens as Escherichia coli, Pasteurella tularensis, Hemophilus influenzae, Pseudomonas aeruginosa, Bacillus proteus, Eberthella typhosus and Brucella abortus. With certain outstanding exceptions, the *in vivo activity of streptomycin parallels its in vitro activity.*

Streptomycin is not appreciably absorbed when given by the oral route, although it is not significantly destroyed in the gastrointestinal tract. For systemic action it must be given by the parenteral route.

Streptomycin is useful in the treatment of urinary tract infections due to streptomycin-sensitive gram-negative organisms. In the presence of obstruction, streptomycin is of only temporary benefit, and successful therapy depends on correction of the underlying anatomic condition. Pasteurella tularensis is highly susceptible to streptomycin, and this agent is the most effective treatment for tularemia at present available. Influenzal meningitis due to various Hemophilus organisms has been successfully treated with streptomycin, as has Hemophilus infections in other parts of the body. Wound infections, bacteremias and other infections due to streptomycin-susceptible organisms may be treated with this agent.

Experience with streptomycin in the treatment of undulant fever, bacillary dysentery and typhoid has been disappointing, and failure of therapy has been the rule. Until further work elucidates the place of streptomycin in these infections, its use cannot be recommended.

Although streptomycin shows promising results in the therapy of tuberculous infections in guinea pigs, the clinical experience in human infections has not been sufficiently large to delineate its precise role in the control of human tuberculosis. At best it does not appear to offer more than limited usefulness as an adjunct to other forms of therapy.

Streptomycin is capable of producing side reactions of varying severity. Certain lots have been found which produce a histamine-like reaction on parenteral administration with a fall of blood pressure and syncope. This is due to some accompanying toxic material, and its occurrence is now rare. The most serious toxic effect is its neurotoxic action on the eighth nerve, which may occur in about 10 per cent of patients treated with large doses (3 to 4 Gm. daily) over periods of several weeks to months. This is characterized by vertigo, tinnitus, disturbance of equilibrium and diminished auditory acuity. On cessation of therapy, partial recovery of eighth nerve function is the rule, although this recovery is slow, and vestibular function appears to be permanently impaired although compensation occurs. Minor toxic effects include skin rashes, mild malaise, muscular aching and drug fever.

Dosage.—For intramuscular injection, the powder should be dissolved in sterile, pyrogen-free distilled water or isotonic solution of sodium chloride to give a concentration of from 100 to 200 mg. of streptomycin base per cubic centimeter. For subcutaneous injection, more dilute solutions are recommended. If the drug is administered by intravenous drip, 1 to 2 Gm. dissolved in a liter of isotonic solution of sodium chloride may be administered at a rate of about 25 drops per minute. For intrathecal administration, 10 to 20 mg. per cubic centimeter in isotonic sodium chloride solution should be used. For topical application, solutions containing 25 to 50 mg. per cubic centimeter may be used.

The dosage of streptomycin should be governed by the susceptibility of the organism responsible for the infection. In severe fulminating infections, doses of 2 to 4 Gm. daily may be necessary, given in divided doses, parenterally, every three hours. In less severe infections, and with highly susceptible organisms, daily doses of from 1 to 2 Gm. may be sufficient. Treatment should be continued for at least forty-eight to seventy-two hours after the temperature returns to normal and all signs of infection have disappeared.

It is important to give sufficiently large doses to inhibit or kill the infecting organisms quickly, since the development of "fastness" to streptomycin is common and may occur rapidly. Inadequate dosage predisposes to the development of resistant strains of the organisms.

Abbott Laboratories, North Chicago, Ill.

Streptomycin Sulfate: Vials containing streptomycin sulfate equivalent in activity to 1 Gm. of streptomycin base (one million units).

Merck & Co., Inc., Rahway, N. J.

Streptomycin Hydrochloride: Vials containing streptomycin hydrochloride equivalent in activity to 1 Gm. of streptomycin base (one million units).

Chas. Pfizer & Co., Inc., New York

Streptomycin Hydrochloride: Bottles containing streptomycin hydrochloride equivalent in activity to 0.375 Gm. of streptomycin base.

Streptomycin Sulfate: Bottles containing streptomycin sulfate equivalent in activity to 1 Gm. of streptomycin in base.

CONTRACEPTIVE JELLIES AND CREAMS (See New and Nonofficial Remedies, 1946, p. 360).

The following article has been accepted:

Holland-Rantos Company, Inc., New York

Koromex Cream: 78 Gm. collapsible tubes. A water soluble stearic acid emulsion having a p_H of 4.2, prepared from the formula:

Stearic acid	20.0%
Cetyl alcohol	1.0
Glycerin	5.0
Boric acid	2.0
Oxyquinolin benzoate	0.02
Phenylmercuric acetate	0.02
Polyoxyalkalene sorbitan monostearate	3.0
Sorbitan monoöleate	5.0
Perfume	0.015
n-butyl-p-hydroxybenzoate	0.02
Water	q. s.

Packaged with a vaginal applicator or in refill packages containing a tube of cream only.

U. S. trademark 213,756.

Actions, Uses and Dosage.—See article Contraceptive Jellies and Creams.

Koromex Applicator: A transparent plastic syringe threaded at the blunt, intravaginal end, to screw onto the tubes of Koromex Cream, to permit filling by compression of the tube. The full capacity is 5 cc., the recommended dose.

THEOPHYLLINE (See New and Nonofficial Remedies, 1946, p. 395).

The following dosage form has been accepted:

E. S. Miller Laboratories, Inc., Los Angeles

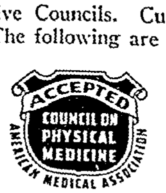
Tablets Theophylline: 0.1 Gm.

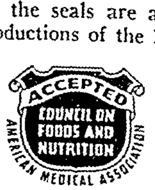
Council on Physical Medicine Council on Foods and Nutrition and the Council on Pharmacy and Chemistry

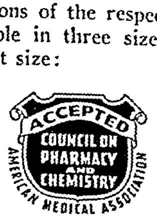
The following statement is published for the information of manufacturers of accepted preparations and others who are concerned:

Howard A. Carter,
Secretary, Council on Physical Medicine.
J. R. Wilson,
Secretary, Council on Foods and Nutrition.
Austin Smith,
Secretary, Council on Pharmacy and Chemistry.

For a number of years the Councils have authorized the use of seals in connection with products which have been found eligible for inclusion as "accepted" in the publications of the respective bodies. It was recently pointed out that each of the seals emphasized the Association rather than the Council awarding the seal, a fact which it is believed gave rise to the erroneous impression that it is the Association rather than the individual Council that accepts a preparation or device. To correct this the seals were redesigned to emphasize the name of the Council concerned. Attention is called to the similarity of the seals, which intentionally indicates the corresponding similarity in methods of procedure, principles and objects of the three Councils. No change has been made in the rules governing the use of the seals. These rules appear in publications of the respective Councils. Cuts of the seals are available in three sizes. The following are reproductions of the largest size:






ACCEPTED
COUNCIL ON PHARMACY AND CHEMISTRY
AMERICAN MEDICAL ASSOCIATION

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - Chicago 10, Ill.

Cable Address : : : : "Medic, Chicago"

Subscription price . : : : : Eight dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, FEBRUARY 1, 1947

CALORIC INTAKE AND INDUSTRIAL OUTPUT

For years it has been assumed that the caloric needs of man were well understood. This assumption was based on the work of Rubner, Benedict, Lusk, Du Bois and others who with calorimeters diligently gathered the information needed for the calculation of caloric needs of both individuals and groups.

In the recent war opportunities developed for studying large groups of men over extended periods. Individual experiments in the past had often been done under circumstances that left doubts as to the rigor with which the given diet was observed. The war, however, created situations in which whole groups became completely dependent on strictly rationed supplies. Studies made under these conditions have corroborated observations previously made by slow, painstaking calorimetric studies on individuals.

Kraut and Muller[1] have related the caloric intake of workers to their industrial output. Their observations confirm some accepted beliefs about the human body. The body is often compared to a machine, and to it the law of the conservation of energy is assumed to apply in a rough sort of way. Accordingly the energy derived from ingested food is distributed between two functions, one the function of keeping the body alive at a certain basic level of weight and lesser activity, the other the function of carrying out additional work, exercise or play. The authors provide figures for miners, steel workers and others on strict rations to show that this distribution did occur in groups studied during the war, when rations in Germany were often reduced below the basic requirements. In their observations the authors divide the caloric intake into two portions according to their role, from 1,600 to 1,800 calories for basic needs and an additional portion for work. One group of 20 workmen, fed entirely by the factory management, were occupied with the erection of an embankment inside the works. Observations covered more than a year, during which it was shown that production, as measured in tons per unit of time, depended directly on available work calories. When work did not consume all the ingested calories, a mass weight gain was recorded. When production was stimulated by a premium of tobacco, a mass weight loss was recorded. This showed that, if output surpassed the range of caloric possibilities, the deficit had to be met by withdrawal of energy from body substance. As long as a worker received calories above the basic level, he unconsciously adjusted his activity to maintain his weight. If he received nothing above the basic level, adjustment was not possible other than weight loss in proportion to work. This clearly brought out the plight of civilian groups such as housewives, in whom any activity above the basic level caused prompt loss of weight. Miners and steel workers also were studied. The longest and most remarkable study had to do with the relation between nutrition and coal production of the Ruhr district from September 1939 to September 1944.

Assuming the correctness of these records, it is apparent why, on a starvation diet, the capacity to work is lowered and work finally stops entirely. The reason for the fall in coal production in the Ruhr during the war is quite clear. A small number of well fed men can produce more than a large number of men on subminimal diets, and attempts to maintain crews of starving men are sheer waste. An obvious contemporary application of these facts is to the feeding of prisoners of war. According to statements widely publicized in American newspapers, thousands of men, denied repatriation at this late date, are still being required to do heavy physical work on inadequate diets. This policy is stupid.

---

[1] Kraut, H. A., and Muller, E. A.: Calory Intake and Industrial Output, Science **104**: 495 (Nov. 29) 1946.

ADVANCES IN THE STUDY OF HEMOLYTIC STREPTOCOCCI

In a review of modern methods of studying hemolytic streptococci Swift[1] points out that military medical practice offers opportunities for the study and control of acute streptococcic diseases now not usually or easily available in civil practice. During the war frequent outbreaks among recruits of infections, especially respiratory, due to hemolytic streptococci led to well organized studies of these important organisms. The term hemolytic streptococci indicates that certain cocci which grow in chains can cause lysis or laking of red blood corpuscles. On the basis of other biologic properties, notably serologic or antigenic reactions and pathogenicity in different species of animals, these streptococci are divided into several distinct groups. The serologic grouping (Lancefield) depends on the elaboration by each group of a specific antigenic carbohydrate, the C substance. Group A contains the chief hemolytic streptococci pathogenic for man. This group is divided into types by means of agglutination and the precipitin reaction, each dependent on the presence in the cocci of specific protein components. The serums of animals immunized with virulent strains are used for the typing of group A. So far some forty types of this group have been recognized. It is said[1] that over 90 per cent of the strains recovered from army and navy trainees were composed of ten to twelve types.

---

[1] Swift, H. F.: Modern Technics for Studying Hemolytic Streptococci, Bull. U. S. Army M. Dept. **6**: 428 (Oct.) 1946.

Alice Evans[2] and others found that certain types of group A tend to be associated with particular streptococcic infections, but the distribution of types varies. At a given time and place a definite type may predominate, but shifting occurs from season to season and from place to place. Here many factors are involved which as yet are not understood.

Patients who recover from infection with a given type of group A will be immune for some time as a rule to reinfection by that type but perhaps subject to infection by other types. In other words, each type of streptococcus A infection is a distinct disease; consequently isolation in streptococcic infections should be practiced accordingly. Observations in the armed forces have established that cross infections readily occur when patients with different types of streptococcic infections are in the same ward. In any series of streptococcic infections prompt typing is needed in order to determine whether the infections are by different types of streptococci or an outbreak due to a virulent strain of a single type requiring immediate control. Typing will be of value also in the handling of the streptococcus carrier. Is he potentially dangerous or relatively harmless? The type of streptococci he carries in his nasal and throat secretions must be determined. If they belong to other groups than A or grow in so-called glossy colonies they may be of little importance in spreading infection. Swift says that "it is now obvious that a person should not be condemned as a disease disseminator merely because hemolytic streptococci can be recovered from his nose and throat." Typing is of essential importance also in the determination of the resistance of strains of certain types of hemolytic streptococci to sulfonamide compounds, penicillin and perhaps other antibiotics.

The interpost spread by troop transfers of similar respiratory epidemics due to a specific sulfonamide resistant strain of type 17 has been well studied.[3] Facilities should be available for streptococcus grouping and typing as well as for the determination of antibiotic resistance. Before the mass administration of sulfadiazine, for instance, it should be determined that the streptococcus strain involved in the outbreak is not sulfonamide resistant. The wide incidence of resistant strains makes this precaution essential. The results of newer methods of studying hemolytic streptococcus infections in military medical practice indicate that the general application of these methods will advance the understanding and control of the streptococcic diseases in civil practice also.

---

[2] Evans, Alice C.: The Distribution of the Various Agglutinative Types of Hemolytic Streptococci of Group A, J. Infect. Dis. 78:1 (Jan.-Feb.) 1946.

[3] Delamater, E. D.; Jennings, R., and Wallace, A. W.: Preliminary Report of an Outbreak of Streptococcal Disease Caused by a Sulfadiazine Resistant Group A, Type 17, Hemolytic Streptococcus, J. Infect. Dis. 78:118 (March-April) 1946. Mitchell, R. B., and others: The Interpost Dissemination of Epidemic Strains of Hemolytic Streptococci by Troop Movements, ibid., p. 128. Roberg, N. B.: An Epidemic Caused by a Sulfadiazine Resistant Strain of the Streptococcus Hemolyticus (Group A, Type 17), ibid., p. 135. Wilson, O. G.: An Outbreak of Sulfadiazine Resistant Streptococcus Infection at Lowry Field, Colorado, ibid., p. 147.

EPIDEMIOLOGIC PNEUMOCOCCIC PNEUMONIA

The scant information on the epidemiology of pneumococcic pneumonia as compared with the wealth of information as to its causative organism, the clinical course and the therapy can be accounted for, according to Hodges and MacLeod,[1] by the great difficulty of sufficiently controlling a civilian population so that exact relationships can be worked out between the many epidemiologic factors which contribute to the incidence of this disease. These authors investigated an epidemic of pneumococcic pneumonia at a technical training school of the Army Air Force between December 1942 and April 1945. The incidence of pneumonia at this school was higher than for other schools in the Technical Training Command of the Army Air Force and greatly in excess of the rates experienced by the Air Force as a whole.

Pneumococcus type II was the predominant organism over the entire period, causing approximately 35 per cent of all cases of pneumonia. Types I, V, VII, XII and IV were responsible for large numbers of infections and should be considered also as epidemic types. The uniformity of the population with respect to age and length of service in the Army, as well as the circumstances under which the men lived and worked, afforded an excellent opportunity for epidemiologic investigation of respiratory infections. The study of the population characteristics influencing the incidence of pneumococcic pneumonia revealed that the length of military service and duration of stay in the technical school played their part. Spread of respiratory infections by means of classrooms appears to be of greater importance than spread in barracks. This conclusion is supported by the observation that respiratory diseases affected the entire population in uniform fashion without any evidence of foci in individual barracks or squadrons. The maintenance of high rates for pneumococcic pneumonia was favored by close contact in classrooms during hours on duty as well as in the barracks. The incidence of pneumococci in classroom and barrack dust was approximately the same. The types of pneumococci predominant in the dust were the same as those present in the pharynx of normal men. Previous geographic environment, age, chilling or fatigue did not appear to be an important factor in the production of pneumococcic pneumonia in the population as a whole.

---

[1] Hodges, R. G., and MacLeod, C. M.: Epidemic Pneumococcal Pneumonia: I. Description of the Epidemic, Am. J. Hyg. 44:183 (Sept.) 1946; II. The Influence of Population Characteristics and Environment, ibid., p. 193; III. Pneumococcal Carrier Studies, ibid., p. 207; IV. The Relationship of Nonbacterial Respiratory Disease to Pneumococcal Pneumonia, ibid., p. 231. This investigation was a joint project of the Commission on Pneumonia, Board for the Investigation and Control of Influenza and Other Epidemic Diseases in the United States Army, Office of the Surgeon General, United States Army, and the Army Air Force Rheumatic Fever Control Program, Office of the Air Surgeon.

Pneumococcus carrier studies revealed that the carrier rate for all types combined varied with the seasons, being considerably higher during the winter months than during the spring or summer. The carrier rate did not bear a close relationship to the incidence of either nonbacterial respiratory disease or pneumococcic pneumonia. The carrier rates for certain of the infective types of pneumococcus, especially types IV and XII, showed a good correlation with the incidence of pneumonia caused by these types. A high carrier rate for infective types, however, did not by itself account for the incidence of pneumonia caused by these types. New arrivals at the post carried relatively few of the infective types of pneumococcus but rapidly acquired them during the first six weeks of their stay. The peak incidence of pneumonia occurred during the same period. The authors believe that a high carrier incidence for pneumococcus types I, II, V, VII, XII and IV was built up during the first winter season after the opening of the technical school and that these types were passed on to succeeding generations of students for the next three years. It seems probable that a decrease in the carrier incidence of the first four types occurred during the 1944 to 1945 season as a consequence of specific immunization against these types. Evidence was obtained which indicates strongly that pneumococci did not cause common upper respiratory disease, at least on any considerable scale.

Over a three year period of study 1 patient with pneumococcic pneumonia was admitted to the hospital for every 10 patients with nonbacterial respiratory disease. A higher ratio occurred shortly after the technical school was opened, presumably because the population had not yet become saturated with the infective types of pneumococci. During a period when pneumococcus type II was causing a large proportion of cases of pneumococcic pneumonia the ratio was lower. Evidence was not obtained that either influenza A or influenza B caused greater predisposition to pneumococcic pneumonia than other nonbacterial respiratory infections. The highest incidence of pneumococcic pneumonia, occurring when influenza A or B was epidemic could be explained on the basis of the large number of cases of nonbacterial respiratory disease caused by these viruses. The ratio of pneumonia to nonbacterial respiratory disease remained approximately 1 to 10. A consistent relationship could not be found between the incidence of pneumococcic pneumonia and streptococcic respiratory disease. Furthermore, the rates for streptococcic disease showed no obvious relation to nonbacterial respiratory disease.

From the data presented in these papers it is apparent that a simple explanation of the extremely high pneumonia rates encountered at the technical school is not possible. The high incidence appears to have been the result of a number of factors. In December 1942 and January 1943 the population of the technical school became heavily seeded with pneumococci. Prior to that time there had been relatively little pneumococcic pneumonia despite high rates for nonbacterial respiratory disease. From the beginning of 1943 until April 1945 pneumococcic pneumonia was prevalent in the technical school. The infective types of pneumococci were apparently passed along from one generation of students to another. Evidence for this is to be found in the similarity of the three winter seasons in the distribution of types of pneumococci causing pneumonia, allowing for the modification in distribution which resulted from immunization with the capsular polysaccharides during the 1944 to 1945 season. The authors assume that the presence in the population of large numbers of virulent pneumococci was one of the principal factors in the production of high pneumonia rates. The environmental conditions existing in the technical school, the constant flow of new susceptibles through the school and the thorough mingling of the school population all favored the spread of respiratory diseases. The same factors almost certainly contributed to the dissemination of pneumococci.

Current Comment

MEDICINE SERVES AMERICA

Electrical transcriptions prepared by the Bureau of Health Education have now been in use by county medical societies, state societies, health departments and other agencies for practically three years with conspicuous success. The first full year of such local broadcasting from "platters" brought about just under 3,000 local broadcasts; the second year witnessed an increase to approximately 4,500 such broadcasts. A new series of transcriptions entitled "Medicine Serves America" is announced on page 326 of this issue of THE JOURNAL. One of the disadvantages of electrical transcriptions is their fixed character. They are not subject to revision. The rapid pace of medical progress might outdate a set of transcriptions during the time between the beginning of preparation and the delivery of the finished product. In the series "Medicine Serves America" the Bureau of Health Education believes that it has overcome this disadvantage. This series, unlike the other series, is not devoted to a single topic but is a miscellaneous collection of subjects. The list of its titles will vary from time to time. Material of current interest will be included while it is fresh and will be dropped as quickly as it becomes outdated.

THE ALLERGIC PULMONARY REACTIONS OF LOEFFLER'S SYNDROME

Loeffler's syndrome[1] is characterized by changing, even transitory, pulmonary infiltrations, eosinophilia of the blood and sputum, and a relatively mild clinical course, usually afebrile, in contrast to the roentgenographic appearances in the lungs. Frequent x-ray examinations are necessary to understand the changes in the lungs. Many clinical reports of such cases have been published. In most of these reports the syndrome is explained as an allergic response in the lungs to various allergenic substances, including the tubercle bacillus, pollens, Endameba histolytica, the larvae of Ascaris lumbricoides, trichinae, and nematodes of cutaneous helminthiasis.[2] Fleeting pulmonary consolidations have been described in association with sulfonamide treatment,[3] brucellosis, asthma, amebiasis and trichiniasis. The structural alterations in the lungs at various stages of the syndrome have not been described adequately. The changes in the few cases examined after death appear to support the allergic explanation, and they may be summarized as bronchitis and pneumonia, lobular and interstitial, with pronounced eosinophilia in the exudation and infiltration coupled with appreciable increase of eosinophils in the blood. In a case of Loeffler's syndrome in a woman aged 59 with "symptomatic nonspasmodic 'asthma' of seven years' duration" there were large numbers of eosinophils in the pneumonic exudate, granulomatous and fibrous changes with necrotic arteritis and phlebitis of the allergic type.[4] Much remains to be learned about the pulmonary reactions of Loeffler's syndrome. Perhaps granulomatous processes in other organs, e. g. eosinophilic granuloma of bone, may also be allergic.

SUDDEN DEATH IN YOUNG MEN

The Army Institute of Pathology received reports between 1942 and 1946 of approximately 1,000 sudden nonaccidental, noncombat deaths of apparently healthy soldiers aged 18 to 40. Pathologic examination of between 700 and 800 of these, reviewed by Moritz and Zamcheck,[1] reveals that approximately 350 of the deaths were caused by previously unrecognized heart disease, almost 300 of which were due to coronary arteriosclerosis. The postmortem examinations disclosed severe atherosclerosis of one or both coronary arteries, and thrombotic occlusion was recognized in approximately 25 per cent. Of the 91 cases involving sudden death from nontraumatic intracranial hemorrhage the bleeding was principally subarachnoid and appeared to have resulted from ruptured aneurysm of congenital or berry type in 69. Also included as a cause of sudden death was meningococcemia, in some cases of which death occurred within twenty-four hours after onset of incapacitating symptoms. This group included 110 cases of the 350 fatal meningococcic infections reported. The records of 95 of these were sufficiently complete to analyze. Purpura or cutaneous petechiae were recognized in over 80 per cent. Focal or massive adrenal hemorrhages were encountered in 71 per cent. The authors believe that adrenal hemorrhage in fulminating meningococcemia is usually preceded by degenerative changes in the cells of the glomerular and fascicular zones of the cortex. Some 200 to 400 sudden deaths were classified as due to miscellaneous causes. The largest single cause was infection of the respiratory tract. Other causes included aortic rupture, encephalitis, nonmeningococcic meningitis and pulmonary tuberculosis. At least 140 sudden deaths were investigated in which the postmortem observations disclosed nothing abnormal.

"DR. GRAHAM AND FAMILY" GOES ON THE AIR

Through the cooperation of the Mutual Broadcasting System the American Medical Association will start on February 3 a program under this title, announced in detail on page 326 of this issue of THE JOURNAL. The program will be devoted to a portrayal of the family doctor as he lives and practices in a fictitious but typical average middle size American city set in the midst of an imaginary rural area. Such city-county combinations are the backbone of the nation. In such areas practice a vast majority of American physicians serving their patients in sickness and in health and contributing to the life of the community as only professionally trained citizens can. The form and type of the program will be entertainment somewhat after the manner of the radio feature "One Man's Family." The doctor will be portrayed primarily as a man in the setting furnished by his family, his practice and his community. This is an interpretative rather than an educational program. Nevertheless the glimpses of medicine that will show through will be modern and informative. The broadcasts will originate from New York. There will be no speaker. The dramatization will be permitted to create its own impression. The establishment of this new program in no way affects the broadcasts under the title "Doctors—Then and Now" by the National Broadcasting Company. Neither does it preclude the possibility of additional radio arrangements. The electrical transcription services will be continued. All are under the supervision of the Bureau of Health Education.

---

[1] Löffler, W.: Zur Differential-Diagnose der Lungeninfiltrierungen; über flüchtige Succedan-Infiltrate (mit Eosinophilie), Beitr. z. Klin Tuberk. **79:** 368, 1932; *Die flüchtigen Lungeninfiltrate mit Eosinophilie,* Schweiz. med. Wchnschr. **66:** 1069 (Nov. 7) 1936.

[2] Wright, D. O., and Gold, E. M.: *Loeffler's Syndrome Associated with Creeping Eruption (Cutaneous Helminthiasis),* J. A. M. A. **128:** 1082 (Aug. 11) 1945.

[3] Ellis, R. V., and McKinlay, C. A.: Allergic Pneumonia, J. Lab. & Clin. Med. **26:** 1427 (June) 1941.

[4] Bagenstoss, A. H.; Bayley, E. C., and Lindberg, D. O. N.: Löffler's Syndrome: Report of a Case with Pathologic Examination of the Lung, Proc. Staff Meet., Mayo Clin. **21:** 457 (Nov. 27) 1946.

[1] Moritz, Alan R., and Zamcheck, Norman: Sudden and Unexpected Deaths of Young Soldiers: *Diseases Responsible for Such Deaths During* World War II, Arch. Path. **42:** 459 (Nov.) 1946.

ORGANIZATION SECTION

Official Notes

NATIONAL CONFERENCE ON RURAL HEALTH

The second annual meeting of the National Conference on Rural Health will take place at the Palmer House, Chicago, Friday and Saturday February 7 and 8. In line with the purpose of the conference, to discuss ways and means of improving *rural medical service, the following program has been prepared:*

Palmer House, Friday Morning

9: 00 A. M. *Registration*
Red Lacquer Room
9: 45—9: 55 A. M. *Purpose of Conference*
F. S. Crockett, M.D., Chairman, Committee on Rural Medical Service American Medical Association
9: 55—10: 00 A. M. *Address of Welcome*
George F. Lull, M.D., Secretary and General Manager, American Medical Association
10: 00—10: 15 A. M. *The Farmer and the Medical Service Program*
Albert S. Goss, Master, the National Grange, Washington, D. C.
10: 15—10: 55 A. M. *Methods of Bringing and Holding Doctors in Rural Areas*
Chester Starr, Director of Rural Health, Missouri Farm Bureau Federation, Jefferson City
10: 55—11: 35 A. M. *Hospital Facilities and Health Centers for Rural Areas*
Mrs. Roy C. Weagly, President, the Associated Women of the American Farm Bureau Federation, Hagerstown, Md.
Graham L. Davis, Director, Division of Hospitals, W. K. Kellogg Foundation, Battle Creek, Mich.; Member Federal Hospital Council
Joseph W. Fichter, Master, Ohio State Grange, Columbus
Robin C. Buerki, M.D., Dean, Graduate School of Medicine, University of Pennsylvania, Philadelphia; Member Federal Hospital Council
11: 35—11: 45 A. M. *Intermission*
11: 45—12: 30 A. M. *Voluntary Medical Prepayment Plans as They Apply to Rural Communities*
Edward Mertz, Director of Education, Farmers Educational and Cooperative Union of America, Denver
James R. McVay, M.D., Vice Chairman, Council on Medical Service, American Medical Association, Kansas City, Mo.
J. S. Jones, Secretary, Minnesota Farm Bureau Federation, St. Paul

F. S. Crockett, M.D., Chairman.

A. M. A. Headquarters, Friday Afternoon

ROUND TABLE DISCUSSIONS *

2: 00—5: 00 P. M.
1. *Hospital Facilities and Health Centers*
   Allen T. Stewart, M.D., Chairman
   Mrs. Roy C. Weagly, Co-chairman
2. *Methods of Bringing and Holding Physicians and Dentists in Rural Areas*
   J. S. Jones, Chairman
   H. B. Mulholland, M.D., Co-chairman
3. *Voluntary Medical Prepayment Plans*
   James F. Doughty, M.D., Chairman
   Mrs. Paul Palmer, Co-chairman
4. *Nursing Needs of Rural Communities*
   Mrs. Chas. W. Sewell, Chairman
   Chas. W. Holman, Co-chairman
5. *Health Council as Agency for Promoting Rural Health*
   J. Paul Jones, M.D., Chairman
   Lloyd C. Halvorson, Co-chairman
6. *Medical Care for Lower Income Groups*
   Owen Cooper, Chairman
   Edward Mertz, Co-chairman

Palmer House, Red Lacquer Room,

Saturday Morning

9: 30 A. M. *Reports of Round Table Committees and Discussion*
1: 00 P. M. *Luncheon*
Speakers:
Hon. J. Melville Broughton, Raleigh, N. C.
Harrison Shoulders, M.D., President, American Medical Association
Olin West, M.D., President-elect, American Medical Association

L. W. Larson, M.D., Co-chairman.

ADDITIONAL ELECTRICAL TRANSCRIPTIONS

The Bureau of Health Education of the American Medical Association announces a new series of electrical transcriptions under the title "Medicine Serves America," available about February 15. This makes the fifteenth series of transcriptions and provides a transcription library which is now large enough to keep a local medical society broadcasting once a week for almost four years. In this series are included interviews, dramatizations, musical programs and a wide variety of subjects. The new series consists of these programs:

1. Training Good Doctors, Dr. Victor Johnson.
2. Hardening of the Arteries, Dr. W. C. Hueper.
3. Cancer in Industry, Dr. A. J. Lanza.
4. Modern Treatment of Skin Diseases, Dr. W. W. Bolton.
5. Farm Accidents, Dr. H. H. Young.
6. Modern Progress in Drugs, Dr. E. M. K. Geiling.
7. Infectious Heart Disease, Dr. Walter S. Priest.
8. Woman's Auxiliary to the American Medical Association, Mrs. J. D. Hamer and Mrs. E. A. Allen.
9. Protecting the Public, Dr. Austin E. Smith.
10. Health and Physical Fitness, Dr. Dean F. Smiley and Fred V. Hein, Ph.D.
11. Teamwork in Cancer in Industry, Dr. T. J. Curphey.
12. Working Toward Sound Minds, Dr. Roy R. Grinker.
13. New Hope for the Deafened, Dr. Norton Canfield.
14. The Soul of Medicine, Dr. Harrison Shoulders.

Full information is contained in a radio handbook published by the Bureau of Health Education and available in single copies free to medical societies, health departments and voluntary health agencies when requested on official letterheads. This manual is not primarily designed to be sold, but, if quantities are desired, a nominal price will have to be put on it. Such prices are available on request from the Bureau of Health Education, 535 North Dearborn Street, Chicago 10.

MEDICAL BROADCAST ON MUTUAL NETWORK

Beginning Monday February 3 the American Medical Association and the Mutual Broadcasting System will present a thirty minute dramatic presentation entitled "Dr. Graham and Family" each Monday at 10:30 p. m. Eastern standard time (9:30 Central, 8:30 Mountain, 7:30 Pacific standard time). The show will run for twenty-six weeks.

This will be a running story of the life of a general practitioner in a medium size typical American community. It will portray the doctor's practice and the life in his home and his community relationships. It will have only such medical aspects as will come in naturally because the leading character is a doctor. The purpose of the broadcasts is not so much educational as interpretative.

Plans for the program have been made by Drs. W. W. Bauer and W. W. Bolton of the Bureau of Health Education with Mr. Phillips Carlin and "Bud" Fischell of the Mutual network. The scripts will be written by Allen Sloan and the production directed by Cyril Ambruster.

TELEVISION PROGRAMS

The following television programs have been arranged by the Bureau of Health Education for presentation over Station WBKB, Chicago, on the dates indicated:

February 13.	Psychosomatic medicine. Special Navy film.
February 27.	Plastic eyes and contact lenses. Miriam D. Eubank, M.D., Evanston, Ill.
March 13.	Oral surgery. Lon W. Morrey, D.D.S., American Dental Association, Chicago, and a representative from the Chicago Society of Oral Surgeons.
March 27.	Centennial of American Medicine — Physical Medicine. C. O. Molander, M.D., Chicago, and Howard A. Carter, Ph.D., Secretary, Council on Physical Medicine.

---

* Recommendations of round table committees regarding dentistry and nursing will not be acted on by the Conference but will be referred to the National Organizations concerned.

VICTOR JOHNSON ACCEPTS APPOINTMENT WITH MAYO FOUNDATION

The Board of Regents of the University of Minnesota, the Board of Governors of the Mayo Clinic and the Graduate Committee of the Mayo Foundation have announced the appointment of Dr. Victor Johnson of Chicago to the post of director of the Mayo Foundation for Medical Education and Research to succeed Dr. Donald Balfour when he becomes Director Emeritus in 1947. Dr. Johnson will also be professor of physiology.

Dr. Johnson will join the staff of the Mayo Foundation in April and will become director in October, with Dr. Balfour continuing in an advisory capacity.

Washington Letter

(From a Special Correspondent)

Jan. 29, 1947.

President Truman Thanks Scientists for Wartime Research

President Truman expressed his thanks at White House ceremonies to the scientists who conducted wartime research in the Office of Scientific Research and Development, which is now being disbanded by Dr. Vannevar Bush, director. In the group were Drs. Bush; A. R. Dochez of Columbia University; Alfred N. Richards, chairman, Committee of Medical Research and Development; A. Baird Hastings, of the department of biochemistry of Harvard Medical School; Lewis H. Weed, National Academy of Science; Karl T. Compton, president, Massachusetts Institute of Technology; James B. Conant, president, Harvard University; J. C. Hunsaker, M. I. T.; Roger Adams, University of Illinois; Richard Tolman, California Institute of Technology, and Frank B. Jewett, National Defense Research Committee.

Nuclear Research for Medical and Public Health Work

Leon F. Curtiss, chief, radioactivity section, U. S. Bureau of Standards, outlined joint plans of the bureau and of the U. S. Public Health Service to erect a 20 million dollar national radiation institution at Bethesda, Md. It would be devoted to peacetime research in nuclear energy for public health work and the development of scientific methods for everyday use of radioactive substances. The project has been recommended to the President's Atomic Energy Commission, which has the job of coordinating atomic energy research and has taken offices in the new War Department building in downtown Washington. The program, which would require approval of Congress, would include large laboratories and a uranium pile valued at three million dollars. The project would not study development of atomic energy for war services but would concentrate on research in radioactivity, radiobiology and nuclear energy in general for protection of health.

Health Welfare Programs in Labor-Management Agreements

Labor Secretary Schwellenbach in his annual report to Congress advocated increased use of health-welfare programs in labor-management agreements as "an effective and flexible means of providing greater social security through collective bargaining." He believes that health-welfare programs will assure greater industrial harmony and worker security. John L. Lewis, president of the United Mine Workers, obtained such a fund but wants to increase the industry's contribution to the mine welfare fund from 5 to 10 cents a ton. The C. I. O. "Big Three," steel, automobile and electrical workers unions, are asking for employer financed welfare programs in 1947 wage contracts.

Courses in Mental Hygiene Proposed for Military Academy

Dr. William C. Menninger, formerly chief of the Army Neuropsychiatry Consultants Division and now chairman of consultants to the Secretary of War, revealed here that the Surgeon General of the Army has proposed that mental hygiene be added to the curriculum of the U. S. Military Academy. In Washington with other of the nation's leading psychiatrists to determine how to improve the Army's program, Dr. Menninger said the courses would be adopted to train better leaders. He expressed the opinion that if soldiers had better leaders and more pride in their army jobs there would be fewer breakdowns.

Red Cross Spends Seven Hundred and Thirty Million Dollars in Seven Years

National Chairman Basil O'Connor of the American Red Cross reports that 730 million dollars has been spent by the organization in the last seven years. He described the period as the "most significant" in the history of the Red Cross and listed among the numerous services performed at home and abroad the furnishing of drug, medical and educational supplies and the reorganization of community health and welfare services in war-affected cities. He also reported that 6,663,121 Americans gave 13,326,000 pints of blood in the donor program for the Army and Navy.

Model Center for Rehabilitation of Handicapped Civilians

Dr. Howard Rusk, former chief of Army Air Forces rehabilitation, told a Washington group which included Mrs. Harry S. Truman and wives of cabinet members that there is need for a model center where civilians with physical handicaps could be given the same kind of rehabilitation accorded wounded servicemen and veterans. A drive for $300,000 has been launched. Dr. Rusk pointed out that while the government is gratefully assisting disabled veterans to retrain themselves for useful lives, 23 million civilians also need rehabilitation. He said that twenty-five communities are setting up rehabilitation centers but require a model center.

Promote Nationwide Recruitment of Student Nurses

The Council of Professional Practice of the American Hospital Association has proposed that a nationwide committee be established to promote student nurse recruitment. Dr. Robin C. Buerki, chairman, said that the existing shortage of graduate nurses and low enrolment of students are affecting hospitals, industry, schools, community health organizations, private physicians and local and federal health agencies. The War Department announced that it had given the rank of second lieutenant to 300 nurses with no military experience to meet the acute shortage of nurses.

Three Antivivisection Bills Introduced in Congress

Three bills have been introduced in the 80th Congress which oppose, directly or indirectly, scientific experimentation on animals. House Resolutions 207 and 208, presented by Representative Bradley, Republican of Michigan, would punish persons transporting and receiving stolen dogs in interstate commerce and would prescribe penalties for keeping, injuring and destroying dogs in the District of Columbia. House Resolution 462, submitted by Representative Lemke, Republican, of North Dakota, prohibits "experiments on living dogs in the District of Columbia.

Coming Medical Meetings

Annual Congress on Medical Education and Licensure, Chicago, Palmer House, Feb. 10-11. Dr. Victor Johnson, 535 N. Dearborn St., Chicago 10, Secretary.

National Conference on Rural Health, Chicago, Feb. 7-8. Dr. F. S. Crockett, 535 N. Dearborn St., Chicago 10, Chairman.

Central Surgical Association, Chicago, Feb. 20-22. Dr. Walter G. Maddock, 250 East Superior St., Chicago, Secretary.

Chicago Medical Society Annual Clinical Conference, Chicago, March 4-7. Dr. Willard O. Thompson, 30 N. Michigan Blvd., Chicago 2, Secretary.

Dallas Southern Clinical Society, Dallas, Texas, March 17-20. Dr. Glenn D. Earlson, 1133 Medical Arts Bldg., Dallas, Secretary.

Mid-South Postgraduate Medical Assembly, Memphis, Tenn., Feb. 11-14. Dr. Arthur F. Cooper, 1479 Carr Ave., Memphis, Secretary.

New Orleans Graduate Medical Assembly, New Orleans, Feb. 24-27. Dr. Max M. Green, 1430 Tulane Avenue, New Orleans 13, Secretary.

Pacific Coast Surgical Association, Seattle, Feb. 17-18; Victoria, B. C., Feb. 19-21. Dr. F. L. Reichert, Stanford University Hospital, San Francisco, Secretary.

Medical Legislation

MEDICAL BILLS IN CONGRESS

Cancer Research

Senator Pepper has reintroduced, as S 93 his bill to authorize the President to undertake to mobilize at some convenient place in the United States an adequate number of the world s outstanding experts and coordinate and utilize their services in a supreme endeavor to discover means of **curing and preventing cancer.** Similar bills have been introduced in the House by Representative Dirksen, Illinois, as H R 100, by Representative Rooney, New York, as H R 292, and by Representative Douglas, California, as H R 780

Representative Stevenson, Wisconsin has also introduced a bill, H R 977, to provide for the mobilization of the scientific resources and knowledge of the United States for the purpose of seeking the causes and cure of **cancer, poliomyelitis** and certain other degenerative diseases *of mankind*

Dental Health Programs

A bill introduced by Senator Pepper, Florida, for himself and Senator Murray, Montana, and Senator Aiken Vermont, S 178, proposes to amend the Public Health Service Act so as to provide assistance to states in developing and maintaining **dental health programs.**

Another bill S 176, introduced by Senator Murray, Montana, for himself and Senator Pepper, Florida, Senator Taft, Ohio, Senator Aiken, Vermont, and Senator Morse, Oregon, would provide for, foster and aid in coordinating research relating to **dental diseases** and conditions A similar bill has been introduced in the House by Representative Harris, Arkansas, as H R 574

National Science Foundation

Representative Celler, New York, has introduced H R 942, proposing to enact the "National Science Foundation Act" to promote the progress of science and the useful arts, to secure the national defense and to advance the **national health and welfare** It would establish a National Science Foundation to be administered by an administrator appointed by the President, by and with the advice and consent of the Senate In the foundation there would be a Division of Mathematical and Physical Sciences, a Division of Biological Sciences, a Division of Social Sciences, a Division of Health and Medical Sciences, a Division of National Defense, a Division of Engineering and Technology, a Division of Scientific Personnel and Education, a Division of Publications and Information and such other divisions, not to exceed three in number, as the administrator from time to time may establish after receiving the advice of a National Science Board

Water Pollution Control

Several bills have been introduced to provide for **water pollution** control activities H R 123, introduced by Representative Mundt South Dakota, H R 315, introduced by Representative Spence, Kentucky, and H R 470, introduced by Representative Elston, Ohio These bills would authorize the Surgeon General of the Public Health Service, in cooperation with other federal agencies and with state health authorities and interstate agencies, and with municipalities and industries, to prepare comprehensive programs for eliminating or reducing pollution and improving the sanitary condition of the surface and underground waters in or adjacent to any state Grants-in aid and loans would be made available

Control of Barbiturates

A bill introduced by Representative Rogers, Massachusetts, H R 588, proposes to bring the **barbiturates** within the purview of the federal *narcotic laws*

Miscellaneous

A bill introduced by Representative Lane, Massachusetts, H R 260, proposes to credit to active and retired officers of the Medical Department of the Army all service performed as **interns** in army hospitals on a civilian-employee status

The construction of a **hospital for the insane** of Alaska would be authorized by H R 196, introduced by Delegate Bartlett, Alaska

H J Res 15 introduced by Representative Judd, Minnesota, would designate the week of February 14 in each year as **National Heart Week** and would authorize the President to issue annually a proclamation urging the people of the United States to give heed to this significant medical problem and to cooperate in all steps for its solution The companion measure in the Senate, S J Res 35, was introduced by Senator Bridges, New Hampshire

A **veterans' hospital** at Taft, Okla , for Negro veterans would be authorized by H R 150, introduced by Representative Stigler, Oklahoma

Representative Davis, Tennessee, proposes by H R 227 to authorize the President to appoint as commissioned officers in the Medical Corps of the Army and the Medical Corps of the Navy, on the recommendation of the Surgeon General of the Army or Navy, as the case may be, **x-ray technicians** who are regularly registered to practice as such in any state or in the District of Columbia

A bill introduced by Representative Kelley, Pennsylvania, H R 254, would authorize the director of the Office of Vocational Rehabilitation to encourage, foster and assist in the development, establishment and maintenance of special services and facilities for **handicapped persons**

A United States Commission on **Physical Fitness** would be established under the provisions of H R 220, introduced by Representative Buchanan, Pennsylvania, to promote the physical fitness of the inhabitants of the United States through physical training and competition in all athletic sports, camping and kindred activities For the first fiscal year an appropriation of $25,000,000 would be authorized and thereafter such sum as the commission may recommend and the Congress may determine

STATE LEGISLATION

California

Bills Introduced—A 229 proposes that the **testing of the sight and hearing of school children** be mandatory rather than permissive A 256, to amend the **workmen's compensation act,** proposes to prohibit any company from contracting with any physician hospital or other person for the medical or surgical care or hospitalization *of any injured employee on the basis of such physician,* hospital or other person receiving a percentage of the gross premiums collected by an insurance company or on the basis of any percentage of the employer's payroll or on the basis of any fixed charges which are less than the rates adopted by the industrial accident commission The proposal would further prohibit a physician, hospital or other person from paying over to any employer or insurance carrier a rebate for any sums received for the medical or surgical care or hospitalization of an injured employee A 330, to amend the **chiropractic act,** *proposes that total or partial* blindness shall not be a disqualification for a license to practice chiropractic nor shall any person otherwise qualified be denied the right to file an examination for such license because he is blind A 359 proposes to include chiropodists within the meaning of the term "physician" as used in the workmen's compensation act S 62, to amend the business and professions code, proposes the creation of a board of **naturopathic examiners.** Naturopathy is not defined, but the proposal would authorize the board to grant two forms of certificates (a) naturopathic physician's certificate and (b) minor surgery and obstetrics certificate The naturopathic physician's certificate would authorize the holder to diagnose and treat all human ailments and abnormalities by the use of such forces and substances as light, air, water, clay heat rest, diet, herbs, electricity, massage, Swedish movements, suggestive therapeutics, magnetism, physical culture and mental culture The minor surgery and obstetrics certificate would authorize the holder to practice obstetrics and minor surgery according to accepted procedures but would not authorize the penetration of the eyes, or the cranial thoracic or abdominal cavities of human beings, or the amputation of human arms, hands, fingers, legs, feet, or toes or the practice of plastic surgery

Delaware

Bills Introduced—H 42 proposes to require each applicant for a **marriage license** to obtain a certificate from a duly licensed physician showing that the applicant has undergone a standard serologic test for syphilis and is not infected with such disease S 76, to amend the law relating to the distribution of certain drugs and preparations, proposes that the sale of penicillin, the sulfonamides and thyroid, and preparations containing them may be sold or **dispensed only on prescription** of a duly licensed practicing physician, practicing dentist or practicing veterinarian

Maryland

Bills Introduced—H 52, to amend the **medical practice act,** proposes to exempt therefrom persons treating human ills in accordance with the tenets of Christian science H 69 proposes the creation of a **state board of physical therapy examiners** and defines physical therapy as "the treatment of human injuries, diseases or disabilities by means of the healing properties of massage ultraviolet rays, mechanical devices, heat, cold, air, light, water and electricity, but not by means of roentgen rays, radium, surgery or drugs " The proposal also states that a physical therapist is one who treats only patients diagnosed and referred by licensed medical doctors H 83, to amend the **chiropractic act,** proposes among other things, to define chiropractic as "diagnosis, the location of misalined or displaced vertebrae of the human spinal column, the procedure preparatory to and the adjustment by hand of such misalined or displaced vertebrae of the spinal column and its articulations, by any method not including the use of drugs, surgery or obstetrics, osteopathy, optometry or podiatry, or any branch of medicine for the purpose of relieving such interference and aiding in the restoration of health, provided that nothing herein contained shall be construed to prohibit the use of by any licensed chiropractor of all necessary electrical, mechanical, dietetic and sanitary measures incident to the care of the human body, for the purpose of relieving such interference "

North Dakota

Bill Introduced—S 38 proposes to require every physician, or other person authorized by law to practice obstetrics, who attends a pregnant woman for conditions relating to pregnancy, to take or cause to be taken a **sample of blood of such woman** at the time of the first professional visit and to submit such sample to an approved laboratory for a standard serologic test for syphilis

Tennessee

Bill Enacted—S 15 has become chapter 2 of the public acts of 1947 It repeals the **naturopathic practice act** of Tennessee and provides that it shall hereafter be unlawful for any person, whether heretofore licensed or not to practice naturopathy in the state

GOVERNMENT SERVICES

ARMY

DEEP X-RAY CENTERS FOR RESEARCH AND TREATMENT

The Army Medical Department still operates 4 deep x-ray centers where patients are treated for cancer—Walter Reed General Hospital, Washington, D. C.; Beaumont General Hospital, El Paso, Texas; Army and Navy Hospital, Hot Springs, Ark., and Letterman General Hospital, San Francisco. During the war cancer was not a major problem at any time, the highest incidence rate being 0.34 per 1,000 per year, or about 3 men of every 10,000. Walter Reed General Hospital has one of the few million volt roentgen therapy machines in the world, and it is as easy to operate as the 200 kilovolt x-ray machine seen in many hospitals. A tumor board which convenes at Walter Reed General Hospital every week consists of the chiefs of surgery, laboratory, pathology and radiation therapy services, who consider each case of cancer individually and recommend the type of treatment.

HISTORY OF THE 36th GENERAL HOSPITAL

A brief history of the 36th General Hospital, Wayne University, Detroit, sponsored unit, was recently distributed to personnel who served with that unit to commemorate the first anniversary of its deactivation. The history follows the unit through its three and one-half years in North Africa, Italy and France. The foreword is written by Dr. Richard M. McKean, who served as chief of medical service during most of the hospital's activities overseas and later became its commanding officer. Originally the history was written by two noncommissioned officers, George A. Cavanaugh and John D. Gall, who served with the unit. It was revised by Dr. McKean for the anniversary.

WIDOWS MAY CLAIM TERMINAL LEAVE PAY

The widows, children or parents of former soldiers who died after honorable discharge from the Army and who had not claimed their terminal leave pay prior to their death are entitled to collect these payments, the War Department has announced. Such survivors should write immediately to the Finance Officer, U. S. Army, Army Finance Center, Building 204, St. Louis 20, for application. Only a small number of claims of this type have been received thus far, but it is estimated that in all about 40 million dollars is due eligible survivors of army personnel in this category.

NEW DIRECTOR OF ARMY MEDICAL LIBRARY

Col. Joseph H. McNinch, M. C., has been designated director of the Army Medical Library, Washington, D. C., succeeding Col. Leon L. Gardner, M. C. Colonel McNinch during the war served on the staff of Major Gen. Paul Hawley in the European theater and since returning to the United States has been chief of the historical division in the Surgeon General's Office. He graduated from Ohio State University College of Medicine in 1930 and went directly into the medical corps of the Army. He was recently awarded the Legion of Merit.

COLONEL FREER RETIRES

Col. Arden Freer, M. C., chief of the medical consultants division, Surgeon General's Office, will retire from active duty in February after thirty-two years of service and will join the staff of the medical director of the Veterans Administration in Washington. Colonel Freer was chief of the medical service at Walter Reed General Hospital and director of the department of internal medicine at the Army Medical Center in Washington from 1939 to 1942. During World War I he served with the First Division. Recently he was awarded the Distinguished Service Medal for "exceptionally meritorious service."

NEW HEAD OF MEDICAL CONSULTANTS DIVISION

The War Department has announced that Col. Henry C. Dooling, M. C., former chief health officer, the Panama Canal Zone, has been named chief of the medical consultant's division in the Surgeon General's Office to succeed Col. Arden Freer, recently retired. Colonel Dooling, a native of New Jersey, who entered the Medical Corps during World War I, held the temporary rank of brigadier general during World War II and was awarded the Legion of Merit. Formerly he was chief medical service officer, Beaumont General Hospital, El Paso, Texas, and chief of medical services at Fort Riley station hospital, Kansas.

MEDICAL OFFICERS APPOINTED

The War Department recently announced the appointment to the regular Army of the following medical officers:

Major Schuyler P. Brown	Lincoln, Neb.
Major Sheldon S. Brownton	La Grande, Oregon
Major Anthony Czerwinski	St. Louis
Major John R. Darrah	Spokane, Wash.
Capt. Lindsay J. Ervin	Montrose, S. D.
Major Donald L. Ferris	Cos Cob, Conn.
Major Vincent L. Frankfurth	Spartanburg, S. C.
Major Patrick H. Hoey	Pittsburgh
Capt. George M. Knauf	Rising Sun, Md.
Capt. George H. Kojac	New York
Major Clarence B. La Dine	Indianapolis
Capt. Robert A. McLane Jr.	Phoenix, Ariz.
Capt. Robert E. Nuernberger	Wakefield, Neb.
Major Harold D. Parks	Randolph Field, Texas
Major Albert D. Phillips	Sacramento, Calif.
Capt. Bradley W. Prior	Buffalo
Lieut. Charles O. Rixey	Washington, D. C.
Major John A. Schindler	East Ann Arbor, Mich.
Capt. Max L. Smith	Los Angeles

PERSONALS

Brig. Gen. Guy B. Denit has been appointed chairman of a legislative committee established to examine all current legislative proposals affecting the Medical portion of the War Department's legislative program. The committee will prepare a legislative program for the future needs of the Medical Department and will prepare data in support of, or in opposition to, current legislative proposals affecting the Medical Department.

Col. Frank L. Cole, M. C., director of the surgical consultant division, Surgeon General's Office, was recently elected a member of the board of governors of the American College of Surgeons.

Col. Wesley C. Cox, M. C., has been assigned as the new chief of the Army Industrial Hygiene Laboratory at Edgewood Arsenal, Maryland, with offices in the Surgeon General's Office. Colonel Cox recently returned from service in Panama, where he was Canal Department surgeon. At one time he was an instructor in bacteriology and preventive medicine at the Army Medical School, and Chief, 8th Corps Area Laboratory, Fort Sam Houston, Texas.

Col. Tom F. Whayne, M. C., has been appointed president of a board which will develop the medical portion of the War Department's program for aid to civilian populations in liberated countries.

ARMY AWARDS AND COMMENDATIONS

Colonel James B. Anderson

The Legion of Merit was recently awarded to Col. James B. Anderson, M. C., U. S. Army, of Bradenton, Fla., who was the commanding officer of Ashburn General Hospital, McKinney, Texas, from February 1943 to October 1945, where, states the citation, "he rendered outstanding service and demonstrated unusual clinical ability and administrative skill in setting up and maintaining high standards in the care of patients. His meticulous attention to details and thorough knowledge of hospital work enabled him to suggest and have embodied many improvements in his hospital while it was under construction. Through his keen observation, mature judgment and signal ability to evaluate his personnel and their capabilities, he was able to assign them to positions where they could be of maximum benefit to the service and receive training preparing them for proficient service in overseas theaters. Colonel Anderson displayed indefatigable leadership, penetrating insight and loyal devotion to duty in organizing the Arthritic Center of Ashburn General Hospital at a high level of efficiency. His achievements contributed materially to the war effort, reflecting highest credit on himself and the military service. Dr. Anderson graduated from the Medical College of Virginia, Richmond, and entered the service Jan. 8, 1918.

Colonel Robert A. Trumbull

The Legion of Merit has been awarded to Col. Robert A. Trumbull, M. C., A. U. S., of Dallas, Texas, who as chief, personnel section, office of the surgeon, headquarters, Army Air Forces Training Command, during the period from May 1942 to September 1945, rendered valuable medical contributions by exhibiting great professional skill, sound judgment and an unusual ability to solve the multitudinous problems which confronted his department. The citation also stated that, assisting substantially in maintaining a superior level of professional care and in rendering distinguished services to the health of Army Air Forces Training Command personnel, Colonel Trumbull performed a service which reflects great credit on himself and the armed forces of the United States. Dr. Trumbull graduated from the Medical Department of Southern Methodist University, Dallas, Texas, in 1913 and entered the military service in May 1942.

Lieutenant Colonel Harold R. Hennessy

Lieut. Col. Harold R. Hennessy, M. C., A. U. S., formerly of Berkeley, Calif., was recently awarded the Bronze Star Medal, the citation calling attention to his meritorious service in connection with military operations against the enemy of the United States during the period April 2, 1945 to May 8, 1945 in Belgium and Germany. As public health officer in the office of the army surgeon, Lieutenant Colonel Hennessy demonstrated outstanding qualities of leadership by organizing and directing the public health control of displaced persons, refugees and the German civil population in the Rhineprovinz military district. Through his personal efforts the spread of typhus throughout the army area was halted in a remarkably short time, thus averting a critical problem. Colonel Hennessy's reliability, aggressiveness and tactful nature reflect great credit on himself and the armed forces of the United States. Dr. Hennessy graduated from the University of Minnesota Medical School, Minneapolis, and entered the service Feb. 21, 1943.

Lieutenant Colonel Frank P. Guidotti

The Legion of Merit was recently awarded to Lieut. Col. Frank P. Guidotti, M. C., A. U. S., of New York for performing exceptionally meritorious service in the Second Service Command from March 1942 to October 1945. The citation mentioned especially his work as chief medical examiner of the induction station, New York City, where his planning and reorganization of operating procedures resulted in saving considerable sums of money for the government and likewise conserved manpower by reducing operating personnel during a critical period. He contributed materially to the planning and the development of the medical facilities at the Army's Ground and Service Forces Redistribution Stations, Lake Placid, N. Y., and Atlantic City, N. J., and the separation centers in Fort Dix and Fort Monmouth, which also resulted in a saving of expense to the government. Dr. Guidotti, who graduated from the Regia Università di Napoli Facoltà di Medicina e Chirurgia, entered the service Oct. 8, 1940.

Lieutenant Colonel Francis B. Carroll

The Legion of Merit was recently awarded to Lieut. Col. Francis B. Carroll of Great Barrington, Mass., who distinguished himself in the performance of outstanding service as epidemiologist and chief, Preventive Medicine Branch, Office of the Surgeon, First Service Command, from June 1943 to October 1945. By his sound judgment, wide professional knowledge and meticulous efforts, states the citation, he organized and supervised a program of preventive medicine which was entirely responsible for the low incidence of epidemic and contagious disease within the Service Command. His investigation during an outbreak of meningococcic meningitis resulted in obtaining scientific information in the use of sulfadiazine to control the spread of this disease and was of inestimable value in preventing its spread throughout the armed forces. He conducted pioneer studies in the determination of the degree and rate of rise in immunity produced by inoculations with diphtheria and tetanus toxoid, and his observations brought about many improved methods of immunization. Dr. Carroll graduated from the University of Rochester School of Medicine and Dentistry in 1935 and entered the service Feb. 10, 1943.

Lieutenant Colonel James J. Callahan

The Legion of Merit was recently awarded to Lieut. Col. James J. Callahan, M. C., A. U. S., of Oak Park, Ill., who, as consultant in orthopedic surgery, Fourth Service Command, from June 1944 to August 1945 performed a diversity of tasks. The citation referred especially to the fact that in the face of unprecedented expansion of orthopedic service within the command he formulated and carried into effect the entire program, simultaneously maintaining an exceptionally high standard of treatment for thousands of orthopedic cases. He organized, staffed and secured supplies for brace shops at all general and regional hospitals and supervised training of orthopedic mechanics. He guided experimental work on combat boots at Fort Benning, Georgia, and his services were of inestimable value in determining the correct type of combat boot to be worn by the foot soldier. Dr. Callahan graduated from Loyola University School of Medicine, Chicago, in 1928 and entered the service Nov. 5, 1943.

Major Hugh W. Savage

The Legion of Merit was recently awarded to Major Hugh W. Savage, M. C., A. U. S., of Fort Worth, Texas, who as chief, Domestic Air Evacuation, and as commanding officer, 830 Medical Air Evacuation Squadron, Air Transport Command, from May 1944 to December 1945, was responsible for the foresighted and thorough planning of the safe and expeditious system for returning casualties to the United States. The citation says that his resourcefulness, ingenuity and unstinting devotion to duty reflect great credit on himself and the armed forces of the United States. Dr. Savage graduated from the University of Arkansas School of Medicine in 1941 and entered the service July 1, 1942.

Captain Alfred R. Wollack

The Soldier's Medal has been awarded to Capt. Alfred R. Wollack, M. C., A. U. S., of Park Ridge, N. J., who on Dec. 21, 1945 aboard the S. S. *Athos II* made his way across its hurricane engulfed deck to administer first aid to military personnel injured by forces of the storm. The citation described how his calm procedure under difficult conditions greatly improved the comfort and morale of passengers and was indicative of heroism in the highest degree. Dr. Wollack graduated from New York University College of Medicine in 1942 and went on active duty in the Army in July 1943. He has been awarded also the Bronze Star Medal with Oak Leaf Cluster.

Captain William A. Byrne

The Bronze Star was recently awarded to Capt. William A. Byrne, M. C, A. U. S., of Seneca Falls, N. Y., "for meritorious achievement in connection with military operations against the enemy from Dec. 16, 1944 to Jan. 8, 1945 in Luxembourg and Belgium Throughout this period," the citation disclosed, "Captain Byrne directed the operation of his casualty clearing station in a most efficient and exemplary manner. Although under heavy enemy shell fire he fearlessly went about coordinating the work of his station and maintained an efficient evacuation system When his station became handicapped by a shortage of medical officers and heavy casualties, he worked tirelessly for long hours treating the wounded. The outstanding devotion to duty, ceaseless energy and professional skill displayed by Captain Byrnes reflects great credit on himself and are in keeping with the highest traditions of the military service." Dr. Byrne graduated from Hahnemann Medical College in 1943 and entered the service Jan. 7, 1944.

NAVY

RESERVE OFFICERS WANTED FOR ACTIVE DUTY

Reserve Medical Officers and Pharmacists now have an opportunity to return to active duty at one of the major naval air stations of the Naval Air Reserve Training Command or at one of the Naval Air Reserve Training Units. Reserve officers and pharmacists who are interested should initiate letters to the Bureau of Naval Personnel through the Chief of Naval Air Reserve Training, Naval Air Station, Glenview, Ill., listing three or four stations at which duty is desired in order for preference. Personnel are desired not above the rank of Commander in the Medical Corps. Government quarters are available at many of the major naval air stations. Some of these billets carry orders to duty involving flying for designated Naval Flight Surgeons.

ADDRESS BY DR. J. B. S. HALDANE

The fourth in a series of lectures at the Naval Medical Center, Bethesda, Md., was delivered January 9 by Dr. J. B. S. Haldane, professor of biometry, University College, London, England. Officers of the Army and Navy Medical Corps, Public Health and Veterans Administration and civilian doctors of the District of Columbia and Montgomery County were invited to attend the lecture, after which refreshments were served. Dr. Haldane has continued the work of his late father, the scientist J. S. Haldane, who was a foremost authority on respiration.

SCHOOL OF TROPICAL MEDICINE IN GUAM

At the opening of the new Naval School of Tropical Medicine in Guam Sept. 31, 1946 the speakers were Dr. Victor G. Heiser, Rear Admiral H. W. Smith, Ret., Capt L. B. Marshall, M. C., in command of the new Naval Medical Center, of which the Institute of Tropical Medicine is a unit, Commodore W. E. Kellum, M. C., from Pearl Harbor, fleet medical officer, Comdr. S. A. Britten, M. C., who spoke on tuberculosis in native populations, Capt E. H. Hudson, M. C, on yaws, and Capt. J. J. Sapero, M. C., on malaria The School of Tropical Medicine is under the direction of Comdr. F. A. Butler, M. C. The first class at the school comprised sixteen medical officers, who subsequently will be assigned to military duties throughout the Pacific area.

VETERANS ADMINISTRATION

HOME TOWN MEDICAL CARE FOR VETERANS

Veterans with service incurred disabilities in 32 states, Hawaii and the District of Columbia may obtain free medical treatment from physicians of their choice under two different plans of the Veterans Administration home town medical care program. Both plans enable veterans with service incurred or service aggravated ailments, on approval of their Veterans Administration medical officer, to go to the local physician of their choice for treatment of that service connected ailment only. About half the states are operating under the so-called Michigan plan, the others under the so-called Kansas plan

Under the Michigan plan a nonprofit organization or corporation sponsored by the state medical society handles the administrative details for the Veterans Administration, including the payment of cooperating physicians. The Veterans Administration in turn, pays the organization a lump sum for the professional services rendered, plus a small additional amount for handling the administrative work Under the so-called Kansas plan all administrative work, including payment of individual doctors, is taken care of by the Veterans Administration, and there is no go between organization. Under both plans state medical organizations serve constantly to see that veterans are at all times getting the best possible medical attention.

The following medical organizations are cooperating with the Veterans Administration under the so-called Michigan plan:

California Physicians Service, Los Angeles
Colorado Medical Service, Inc, Denver
Hawaii Medical Service Association, Honolulu
Associated Hospital Service of Maine, Portland
Michigan Medical Service, Detroit
Montana Physicians Service, Helena
The Hospital Saving Association of North Carolina, Inc, Chapel Hill
Oregon Physicians Service, Portland
South Dakota State Medical Association, Sioux Falls
Hospital Benefit Association of South Carolina, Greenville
Minnesota State Medical Association, St. Paul
Washington State Medical Bureau, Seattle
Iowa Medical Service, Des Moines
Wisconsin Veterans Medical Service Agency, Madison
Medical Service Administration of New Jersey, Newark
Veterans Medical Service Plan of New York, New York
North Dakota State Medical Association, Williston

The following medical groups are cooperating with the Veterans Administration under the so-called Kansas plan:

Florida Medical Association, Jacksonville
Wyoming State Medical Society, Casper
Louisiana State Medical Society, New Orleans
Arkansas Medical Society, Fort Smith
Connecticut State Medical Society, New Haven
Medical Society of the District of Columbia, Washington
Medical Association of Georgia, Atlanta
The Illinois State Medical Society, Monmouth
Idaho State Medical Association, Lewiston
Indiana State Medical Association, Indianapolis
Kansas State Medical Society, Wichita
Ohio State Medical Society, Cincinnati
The Medical Society of the State of Pennsylvania, Pittsburgh
Medical Service Bureau of the Utah State Medical Association, Salt Lake City
West Virginia State Medical Association, Charleston
Nevada State Medical Association, Reno
Tennessee State Medical Association, Memphis

HOSPITAL NEWS

The army engineers have let the architect-engineer contract for the Veterans Administration hospital at Erie, Pa., which will be a 200 bed general medical and surgical hospital.

President Truman has approved the purchase of 18 acres of land on University Avenue in West Philadelphia, Pa, as a site for a 1,000 bed Veterans Administration hospital adjoining the Philadelphia General Hospital and the University of Pennsylvania School of Medicine. The President has also approved sites in Olmstead Park in Boston and in Syracuse, N. Y., for 1,000 bed veterans' hospitals. The Syracuse project will involve the removal of an abandoned cemetery and the reinterment of some 4,500 bodies in a new location. This hospital will be built on the 11½ acres adjoining Syracuse University Medical School.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Gaines, John L.	Crossville
Harris, Carlton L.	Wadley
Ingram, George H.	Tuscaloosa
O'Rear, Harry B.	Jasper

Arizona

Burke, Edward L.	Winslow
Gunter, Roy A.	Tucson

California

Beerman, Herman M.	Los Angeles
Benvenuto, John A.	Encinitas
Daly, Joseph L. Jr.	San Pedro
Holden, Isidore	W. Los Angeles
McLin, Edward D.	San Francisco
Marinacci, Alberto A.	Monterey Park
Reese, Lewis L.	Berkeley
Riley, William H.	Fresno

Connecticut

Field, William W.	Fairfield
Flynn, John B.	Oakville
Gallo, Francis	Winsted
Gardner, Sidney M.	Hartford
Marcus, Emanuel	West Hartford

Florida

Herndon, Oma E.	Lake City
Ramage, Raymond C.	Jacksonville

Idaho

Stone, Alfred M.	Boise

Illinois

Kannapel, Lowell E.	Peoria
Raich, John A.	Dwight
Rankin, James T.	Rockford
Vanikiotis, Peter	Chicago
White, Gregory J.	Oak Park
Young, Harold E. Jr.	Chicago

Indiana

Dittmer, Thomas L.	Kouts
Ralph, Robert D.	Shelbyville

Kentucky

Barnes, Malcolm L.	Beaver Dam
Jester, Arthur M.	Winchester

Louisiana

Bourgeois, David E.	Jeanerette
Fama, Joseph R.	Plaquemine
Summer, William C.	Minden
Wiltse, Leon L.	New Orleans

Maine

Archambault, Philip L.	Lewiston
Jacobson, Payson B.	Portland
Lord, Edwin M.	Skowhegan

Michigan

Hackim, Albert S.	Detroit
Klewicki, Herman A.	Hamtramck
Power, John R.	Kalamazoo
Rebuck, John W.	Detroit
Taylor, Clifford B.	Albion

Mississippi

Bonney, Robert T.	Enterprise
Dabbs, Clyde H. Jr.	Tupelo

Missouri

Bryan, James H.	Webster Groves
Ciapciak, Stanley J.	St. Louis
Cleary, Frank	St. Louis
Gale, Joseph F.	Chillicothe
Kaplan, Albert	St. Louis
Pierson, William W.	Kansas City
Tate, Waddy P. Jr.	St. Louis

Montana

Hines, Ralph E.	Fort Harrison

New Jersey

Carras, Peter D.	Paterson
Dos Cher, Ned	Westfield
Galbraith, Biven R.	Stelton
Galeota, William R.	White House Sta.
Garzieri, Anthony R.	Totowa Borough
Gleason, Thomas P.	Bayonne
Gross, Kenneth E.	Union
Nickau, Robert H.	Rahway
Rizzoli, Hugo V.	Newark
Stamler, Jeremiah	W. Orange
Wahrenberger, Walter	Woodcliff
Willis, George G.	Bound Brook

New Mexico

Bass, Hugh L.	Albuquerque
Clauser, Alvin R.	Albuquerque

New York

Bassell, Arthur	New York
Berkwits, Abner	Brooklyn
Betlejeski, Zehu J.	Altamont
Brill, James R.	Larchmont
Cordwell, Robert W.	Ogdensburg
Corey, Robert T.	Angelica
Egbert, John H.	Amsterdam
Emerson, Ralph S.	Roslyn Heights
Esposito, Neil	Brooklyn
Gaetane, Joseph A.	Long Island
Galen, Jack H.	Brooklyn
Gallardo, Edward	Ossining
Garb, Solomon	New York
Goodyear, Stephen	New York
Heinicke, Horst J.	Rochester
Henley, Jean E.	New York
Jeannopoulos, John L.	New York
Kamras, Leon G.	Bronx
Kaney, Emil M.	Larchmont
Kaplan, Leonard A.	New York
Lang, Joseph T.	New York
Latimer, Clarence V. Jr.	Deposit
Lehner, Jerome	Kingston
Light, Jacob S.	Brooklyn
Merle, James J.	College Point
Pesquera, Gilberto S.	New York
Potozky, Henry	New York
Ralph, Fenn T.	Corinth
Ralph, Lester I.	New York
Schneider, George P. Jr.	White Plains
Smith, Jerry	Brooklyn
Taplin, George V.	Rochester
Tesluk, Henry	Buffalo
Vaughan, Lawrence H.	Brooklyn
Weissman, George	Bronx
Zelman, Morris	Brooklyn

North Dakota

Westley, Kent F.	Cooperstown

Ohio

Alison, John Jr.	Cleveland Heights
Baab, Orren D.	Canton
Beery, Walter C.	Lima
Benzon, George H. III	Cleveland
Flachs, Kamillo	Cincinnati
Randall, Samuel J. II	Chillicothe
Tatum, Carroll F.	Akron
Veber, Donald G.	Shaker Heights

Oklahoma

Perry, Fred J.	Tulsa

Oregon

Keller, George F.	Portland

Pennsylvania

Ajac, John C.	Hanover
Belmont, Herman S.	Philadelphia
Botkin, Robert F.	Duquesne
Chaffee, John S.	Erie
Ciaccia, Nicholas L.	Pittsburgh
Fisher, John E.	Philadelphia
Galia, Joseph H.	Eddystone
Ginder, David R.	Palmerton

Pennsylvania—Continued

Golomb, Milton W.	Pittsburgh
Goodman, David H.	Philadelphia
Groff, Harvey D.	Quakertown
Hall, Robert L.	Philadelphia
Hresan, Michael G.	St. Clair
James, Richard T. Jr.	Philadelphia
Kaiser, Robert F.	Philadelphia
Kaminski, Walter S.	Philadelphia
Kehm, Vincent A.	York
Kurtz, Charles H.	Altoona
Machella, Thomas E.	Freeland
Miller, Allen C.	New Oxford
Miller, Francis G.	Chester
Mohnach, Vladimir M.	Philadelphia
Nicklas, Floyd W.	Oakmont
Rambach, Leonard	Lancaster
Rawnsley, Herbert H.	Ridley Park
Rees, David T.	Hyndman
Reichwein, George F.	Ashland
Rhoades, Earl J.	W. Pittston
Roberts, Brooke	Bala Cynwyd
Shoff, John F.	Madera
Taylor, Charles F.	Harrisburg
Winter, John C. II	Williamsport

Rhode Island

Pianka, Wallace J.	Providence

South Carolina

Alion, John J.	Columbia
Hollifield, William C.	Bamberg
Kahn, Bernard I.	Sumter
Scurry, John C.	Greenwood

Tennessee

Baker, Joseph E.	Memphis
German, Richard M. Jr.	Franklin
Henry, Richard	Shelbyville
Rapp, Edwin W.	Memphis
Schull, Lawrence G.	Tullahoma

Texas

Behrman, James M.	Dallas

Utah

Ishida, Hiraku	Topaz

Vermont

Amidon, Richard W.	Burlington

Virginia

Cibelli, Louis A.	Roanoke
Farrow, Reginald C.	Richmond
Ford, Charles P. Jr.	Richmond
Kimberly, David	Salem
Liddington, Charles E.	Alexandria
Longan, Robert C. Jr.	Richmond
Meredith, Henry C. Jr.	Norfolk

Washington

Burgess, Ernest M.	Vancouver
Perry, Raymond M.	Pasco
Sine, Arnot C.	Tacoma

Wisconsin

Beffel, John M. Jr.	Wauwatosa
Hartman, John T.	Janesville
Mace, Norman C.	Mendota

Wyoming

Alley, Ralph M.	Opal, Lincoln City
Rae, Harold B.	Torrington

Puerto Rico

Gallardo Jose A.	Santurce

Hawaii

Hirsch, Louis	Hilo, Hawaii

Not Relieved from Active Duty

Katz, Jerome B.	New Orleans

MEDICAL OFFICERS RELEASED BY THE NAVY

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

Arkansas

Bryant, Emmett P..........El Dorado
Hutchison, Ernest L..........Pine Bluff
Shinn, Bonner L............Russellville
Stevenson, Carl R. Jr. ......Lititle Rock

California

Benner, Winston W.........Santa Rosa
Brown, Lawrence E............Oakland
Chiapella, William C..........Piedmont
Clark, Orlo H............San Francisco
Dunford, Phillips A. Jr.........Berkeley
Francis, Cyril H. C.........Los Angeles
Galeno, William A.......San Francisco
Klinefelter, Philip D............Tulare
Klinefelter, Robert P.......Los Angeles
Langstroth, Lovell Jr.....San Francisco
McReynolds, Roy T.....Pacific Palisades
Manwaring, John H...........Palo Alto
Milejnek, Leland A............Piedmont
Niebergall, Herbert A.......Los Angeles
Pinelli, Roy W...........San Francisco
Reich, Thomas................ Oakland
Schiro, Frank G............Sacramento
Sheldon, John F...............Pasadena

Delaware

Mick, Felix.................... Milford
Tucker, Leonard............Wilmington

District of Columbia

Bailes, Lucius C...............Anderson
Collins, Richard L.........Washington
Devney, James W..........Washington
Holden, Raymond T........Washington
Irani, Ardesbir B. Jr.......Washington
Merrill, Keith Jr..........Washington
Price, Richard H..........Washington

Idaho

McClusky, David A..............Buhl
Mihelich, Lewis.................Boise

Illinois

Douglas, John E...............Chicago
Firoved, James W............Monmouth
Hardinger, John D.............Mattoon
Head, John F.................Oak Park
Kratz, Stephen C............Monticello
Lawder, Homer L............Jerseyville
Moorman, Henry D. Jr..........Aurora
Nock, Wesley S................,Chicago
Olivieri, Ernest P.............Chicago
Palmisano, Ignatius J..........Chicago
Robertson, Alan M............Chicago
Samorajski, Anthony S.........Chicago
Sills, Robert A................Chicago
Wright, John E...............Chicago

Louisiana

Bertucci, Emile A. Jr.......New Orleans
Craven, Joseph F...........New Orleans
Dastugue, Fernand J. Jr...New Orleans
King, John A.............New Orleans
Knight, Charles D..........Shreveport
Marmelszadt, Willard......New Orleans
Menville, John G..........New Orleans
Middleton, Theo F.........New Orleans
Perret, Joseph M. Jr.......New Orleans
Robertson, Roy L............Shreveport
Samson, Clarence L. M.........Crowley
Spaar, Albert P. Jr........New Orleans
Thompson, Ben F. Jr.......Baton Rouge
Trautman, Paul...........New Orleans
Young, Bennett H............Opelousas

Maine

Files, Ernest H.............Westbrook
Lehrman, Harold B............Portland
Stott, Ardenne A..................Bath
Twaddle, John A.................Bethel

Maryland

Coffey, Jerome J..........Silver Spring
Farber, Robert E.......Sparrows Point
Hobelmann, Charles F.........Baltimore
McLean, James E..........Cumberland
Newcomer, William.........Hagerstown
Podolsky, William G..........Baltimore
Richards, Granville H. Jr...Port Deposit

Minnesota

Ehrlich, Sol P............Minneapolis
Fogelberg, Emil J.............St. Paul
Forsgren, Arthur L...International Falls
Godward, Alfred C..........Minneapolis
Grabow, John J. Jr..............Duluth
Gullickson, Glenn Jr........Minneapolis
Johnson, Carl L............Minneapolis
Johnson, Einer W. Jr...........Bemidji
Kallsen, Robert A............Pipestone
Klinkenberg, Royle B..........Rochester
MacCarty, Collin S............Rochester
Martin, William B...............Duluth
Muccilli, Albert C...............Duluth
Schaefer, Joseph A............Shakopee
Schneidman, Norman R....Minneapolis

Mississippi

Boyette, Curtiss G..............Shelby
Burris, Malcolm B..............Clinton
Harthcock, Martin B. Jr......Clarksdale
McFadden, Joseph T............Oxford
Ricks, Henry C. Jr..............Jackson
Taylor, Charles D. Jr....Pass Christian

Missouri

Brower, Clyde L..........Independence
Callaway, Guy D. Jr.........Springfield
Duderstadt, Warren McC...Kansas City
Gerst, Aloysius C..............St. Louis
Godwin, Robert W............St. Louis
Harrington, Geo. L. Jr.....Independence
Kempster, Stephen W.........Columbia
Knight, Jack V.................Osceola
Meagher, Arthur J............St. Louis
Moore, Louis T.............Kansas City
Proud, Gideon O......Richmond Heights
Province, William Jr.......Kansas City
Remley, William A..........Kansas City
Sherwin, Charles S............St. Louis
Shull, George D...........Jefferson City
Tannheimer, John F..........St. Joseph
Talty, Matthew H. Jr........St. Joseph

Nebraska

Cassel, Ralph L.................Geneva
Cline, Frank Jr.................Auburn
Dean, George W...............Lincoln
Everett, Harry H...............Lincoln
Hansen, Hodson A.............Minden
McDonnell, Thomas R.........Fairbury
Miller, Burdette L...............Omaha
Newkirk, John R...............Omaha
Panter, Ed.....................Hebron
Pitcaithley, Harry W...........Lincoln
Pollard, Marven J.............Fairbury

Nevada

Corvino, Leo Frank...............Reno
Gerow, Lynn B...................Reno
Samuels, Frank W.................Reno

New Hampshire

Bergeron, Lawrence N........Rochester
Houde, Raymond W............Seaford
Prybylo, John A.............N. Walpole

New Mexico

Floyd, Bedford F. Jr.............Taos
Hubbard, David G...............Dexter
Pijoan, Michel.............Albuquerque
Warren, Jack..............Albuquerque

New York

Birnbaum, Harry A...........Monticello
Cowdery, John S.............New York
Duffy, Benedict J. Jr.........Rochester
Egan, John T. Jr..........Jamaica, L. I.
Haswell, Forrest M.......Hoosick Falls
Jones, Richard J................Buffalo
Knapp, James W..............Rochester
Matheson, John A.........Staten Island
Moore, Frank Jr..............Brooklyn
Perlmutter, Irwin............ Brooklyn
Pijanowski, Walter J......Schenectady
Rosenthal, Harry H............Brooklyn
Samson, Donald C........Vernon Center
Tower, Donald B............New York
Wawro, Walter J.............Syracuse

North Carolina

Berry, James W.............Bakersville
Bundy, James B.............Fayetteville
Ingram, William B............Norwood
Jones, Paul E. Jr.............Farmville
Lampley, William A......Hendersonville
Sawyer, Walter W. Jr.....Elizabeth City
Shields, William E.........Summerfield
Wilkes, Marcus B. Jr........Laurenburg

Ohio

Adams, George D...............Vernon
Breidenbach, Warren C. Jr.......Dayton
Finlayson, M. W.......Cleveland Heights
Greene, George J.............Cleveland
Klefstad, Lloyd H.............Cleveland
McAllister, William B. Jr.....Cleveland
Minelli, Anthony J............Cleveland
Price, Henry L..................Toledo
Svec, Edward C..................Solon
Thomas, John M................Canton

South Carolina

Bunch, George H. Jr..........Columbia
Cline, Lucius M. Jr...........Charleston
Morrison, Chas. W..............Lancaster
Nettles, John B...............Columbia
Quattlebaum, James T.........Columbia
Wilkins, McMurry Jr.......Greenville

Tennessee

Adams, William M...........Memphis
Beeler, Troy J...................Luttrell
Parker, Roy W...............Nashville
Reaves, Robert G. Jr..........Knoxville

Texas

Hunter, Thomas R. Jr........Lampasas
Love, Horace G. Jr...............Dallas
Rutledge, Art H...............Denison
Skripka, Charles F............Galveston

Vermont

Harwood, Donald H.............Dorset
Oberlander, Andrew J.......Northfield
Pache, Henri L..............Burlington
Perry, John M................Plainfield
Smith, Edward L.............Montpelier
Smith, Roger F..............Waitsfield

Wisconsin

Brick, Enoch B..................Wausau
Christofferson, James W.......Waupaca
Lahmann, Albert H.........Wauwatosa
Ramlow, Robert W.........Wauwatosa
Randolph, William C.........Manitowoc
Scherbel, Arthur L..............Madison

CORRECTION

Elliott, Raymond G.....Kansas City, Mo.

This name, which appeared under Kansas in The Journal, Nov. 2, 1946, page 526, was misspelled.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Bulletin on Monthly Basis.—Beginning January 3 the *Bulletin* of the San Diego County Medical Society went on a monthly basis rather than biweekly. It is expected that the publication will be enlarged. Dr. William H. Gerstweit Jr., San Diego, is the editor.

Personal.—Dr. Otto Guttentag, University of California Medical School, Berkeley-San Francisco, has been granted a temporary leave of absence in order to fill his appointment as consultant on medical education in Germany with the office of the military government in Germany.——Dr. Charles Calhoun Hedges, Vallejo, former health officer of Kings County, has been appointed health officer of Tulare County. A graduate of the University of Virginia, he held full time county health offices in Virginia and West Virginia before coming to California in 1943.

Conference on Alcoholism.—Alcoholism as a public health problem will be the subject for discussion at a conference of physicians, psychiatrists and social workers February 12 in Rodger Young Auditorium, Los Angeles. The conference, sponsored by the Welfare Council, Southern California Society for Mental Hygiene and individual members of Alcoholics Anonymous, Inc., is planned as an aid to alcoholic addicts through the use of medical science, education and understanding. On the program will be Dr. Anton J. Carlson, president and scientific director of the Research Council on Problems of Alcohol; Joseph Hirsh, associate director of the Research Council; Drs. Karl M. Bowman, San Francisco; Lawrence Kolb and Mrs. Dora Shaw Heffner, State Department of Mental Hygiene, Sacramento, and Richard McGee, director of Corrections, California.

CONNECTICUT

Resigns from Medical Examiners Board.—Dr. John C. Rowley, Hartford, a member of the Connecticut Board of Medical Examiners since 1916, declined reappointment to the board December 31. Dr. Wilmet C. Townsend, Hartford, was appointed for a five year term beginning January 1. Dr. Townsend received his degree in medicine from Harvard Medical School, 1925. He has been engaged in the practice of internal medicine and is attending physician at Harvard Hospital. He served in the medical corps, A. U. S., from September 1942 until January 1946, when he was discharged as a lieutenant colonel.

Yale Receives Klebs Library of Medical History.—After a delay of almost four years the extensive medical library of the late Dr. Arnold C. Klebs, Nyon, Switzerland, has been delivered to the Yale Medical Library in New Haven. Before his death in March 1943 Dr. Klebs, although not a Yale man, was persuaded by the late Dr. Harvey Cushing, Yale 1891, to deed his collections to Yale University. His library of more than 22,000 titles was carefully packed under the supervision of Dr. A. C. Breycha-Vauthier, deputy librarian for the United Nations Library, and stored for the duration of the war at Geneva, Switzerland. The arrival of the Klebs gift marks the fulfilment of Dr. Cushing's original idea of bringing together at Yale his own books on the history of medicine together with the collections formed by his intimate friends, Drs. Klebs and John F. Fulton, Sterling professor of physiology, Yale University School of Medicine.

ILLINOIS

Seventeen Counties Vote for County Health Departments.—Seventeen counties have been added to the list of five others in Illinois which have established locally financed and administered county health departments. The Illinois State Department of Public Health and the Illinois Statewide Health Committee have been working since 1942 for full coverage of the state by full time provisional staff health departments in cities and counties. Of the one hundred and two counties in Illinois, twenty-two are in a position to profit by the type of public health protection which two thirds of the other counties in the United States enjoy, it is reported. In the November election one four-county and three bi-county health departments were authorized.

Chicago

Public Health Institute Closes Its Doors.—The Public Health Institute, a nonprofit clinic for the treatment of venereal diseases founded in 1920 and for many years located at 159 North Dearborn Street, according to the Chicago *Tribune*, has closed its doors. The assets, which are said to be comparatively small, will be given to Northwestern University to establish a fund for the treatment and study of venereal disease and other public health problems. The institute from the beginning had been sponsored by a group of well known business men. The *Tribune* also points out that an increase in reported venereal diseases has occurred in Chicago. For the year ended June 30, 1946 the number of cases is said to have totaled 42,097 compared with 29,119 for 1942-1943. The number of cases of gonorrhea reported is said to have increased from 12,000 in 1942 to 25,000 in 1945.

Symposium on Medicolegal Problems.—Under the sponsorship of the Institute of Medicine of Chicago, the Chicago Medical Society and the Chicago Bar Association, a series of five meetings have been scheduled for Tuesday evenings beginning February 4 and extending through March 4. Meetings will be held at the Chicago Bar Association, 29 South La Salle Street. "Psychiatry and Civil Law" is the subject of the first meeting, February 4, with James F. Oates Jr., president, Chicago Bar Association, presiding. The medical presentation will be made by Dr. Francis J. Gerty, professor of psychiatry and head of the department, University of Illinois College of Medicine. The honorable Harry M. Fisher, judge of the circuit court of Cook County, will give the legal presentation. On February 11 "Psychiatry and Criminal Law" will be discussed with Dr. George F. Lull, Secretary and General Manager, American Medical Association, presiding. Dr. Paul L. Schroeder, professor of criminology and head of the Institute for Juvenile Research, University of Illinois College of Medicine, and William F. Crowley, first assistant state's attorney, Cook County, will give the medical and legal presentations. The third subject of the symposium to be presented February 18 is "The Skeleton Speaks: Medical and Legal Implications" with Werner W. Schroeder, Esq., of the Chicago Bar Association, presiding. Wilton M. Krogman, Ph.D., associate professor of anatomy and physical anthropology, University of Chicago, and A. R. Peterson, Esq., of the Chicago Bar Association, will make the presentations. The remainder of the program will be announced in a later issue.

Report on Sunshine, Smoke and Dust.—The U. S. Public Health Service made a study of air pollution in Chicago as a part of a survey of health conditions requested by the city and county governments. The report referred to the surveys on dust which have been made for many years. Each month analyses of dust fall precipitation is still being made at twenty-two stations in Chicago. The monthly average per square mile of dust fall for the year 1945 varied from 212.10 tons at 33 North La Salle Street to 24.06 tons at 7350 Pratt Boulevard. The average monthly dust fall per station was 68.40 tons per square mile, and this was a decided improvement, as shown by the records of twenty years ago. The control of air pollution, the report says, is difficult. About 1,200 locomotives, 25 roundhouses, 450 steamship arrivals per season, 400,000 buildings and other miscellaneous items contribute to the smoke problem. The U. S. Weather Bureau reported that in 1945 Chicago received only 56 per cent of the possible hours of sunshine. Smoke alone is not responsible for this percentage but, combined with fog and partial cloudiness, is a factor in the sunshine record. Chicago has a department of smoke abatement, but the appropriation for this department in 1946 failed to provide adequate personnel to observe all smoke violations and nuisances in the department's seven districts. The report recommended that the Cook County Commission conduct a survey with a view to establishing rules and regulations for smoke abatement and control of air pollution, and that the industrial communities in Indiana near Chicago—Hammond, Whiting, Gary, Indianapolis, Indiana Harbor and East Chicago—be urged to adopt effective legislation for smoke abatement and air pollution control. The railroads, it is estimated, account for about 25 per cent of the city's smoke.

MICHIGAN

Oakland County Deputizes Coroners.—Under a special legislative act, Oakland County now deputizes private physicians to act as coroners when needed. Heretofore they have been elected. Under the new setup doctors will be paid $7 for each call plus mileage. They may be summoned by the county health department or the police. Economy as well as efficiency is the goal of the new system.

Diagnostic Centers for Rheumatic Fever.—The Michigan State Medical Society has established diagnostic centers for rehumatic fever in nine cities throughout the state—Lansing, Grand Rapids, Kalamazoo, Bay City, Traverse City, Jackson, Ann Arbor, Flint and Marquette. Family doctors are invited to bring cases to these centers for diagnosis, laboratory tests and consultation. Clinics were established when the society learned that many Michigan youths were rejected from military service because of cardiac trouble due largely to rheumatic fever.

Typhoid Carriers in Michigan.—For the past thirteen years not 1 case of typhoid has been traceable to a public water supply in Michigan, according to the department of health. The only source of the disease now is carriers, the number of which has decreased from 288 to 262 in 1946. All known typhoid carriers are registered with the health department and visited four times each year by state or local health officials to be sure that they are not employed to handle food or to work in water treatment plants. Eighty-eight cases of typhoid were reported in the state during 1946, as compared to 5,122 in 1900.

MISSISSIPPI

Legislature Grants Out of State Scholarship Loans.—Mississippi is the first state to grant scholarship loans to its young men and women to be used to study medicine in various other schools throughout the nation. The Mississippi State Medical Education Board recently granted forty-seven such scholarships. The University of Mississippi School of Medicine, the only medical school in the state, offers courses in the basic medical sciences but offers no clinical work. West Virginia offers its residents outstate medical scholarships for study in Virginia only.

NEW JERSEY

Certificates of Appreciation.—At a ceremony in Newark, November 20, Certificates of Appreciation from the War Department were presented to ten New Jersey physicians, each of whom had served continuously for three or more years on the Induction Examining Board in the New Jersey-Delaware Recruiting and Induction District. The certificates were signed by Secretary of War Robert P. Patterson and Major Gen. James A. Van Fleet, commanding the Second Service Command. In the citations the War Department expressed its appreciation for patriotic service in a position of trust and responsibility to Herbert R. Van Ness as coordinator of activities of all civilian physicians and as a member of the surgical staff, to George T. Banker as chief of the internal medicine department, to James G. Enright as a member of the internal medicine department, to Isaac E. Gluckman as a member of the internal medicine department, to Nicholas W. Sivolella as a member of the internal medicine department, to Edward A. Murphy as head of the ophthalmologic department, to Jacob Piller as chief of orthopedic surgery, to Samuel Orloff as a member of the pathologic department, to William J. Donahue as a member of the psychiatric department and to Solomon J. Lurie as a member of the surgical staff.

NEW YORK

Speakers' Service.—A survey is now being conducted by the Medical Society of the State of New York to look into the possibility of setting up a speakers' service and to see how this may best be brought about. A member of the staff of the state society is conferring with officials of county societies to learn their present activities and future needs.

Research into Causes of Chronic Alcoholism.—Cornell University Medical School will undertake a five year research project into the causes of chronic alcoholism. It is being financed by funds from the Research Council on Problems of Alcohol and several distilling companies, together with sources of the school and hospital funds. The research is to be carried on under the direction of Dr. Oscar Diethelm, professor of psychiatry at Cornell and psychiatrist in chief at the hospital. The project is in effect a continuation of work that a research team at the hospital has been carrying on for the past five years.

Personal.—Fred Karush, Ph.D., Elmhurst, has been awarded a three year senior fellowship by the American Cancer Society for research at New York University College of Medicine under the direction of R. Keith Cannan, D.Sc., department of chemistry. Mr. Karush has been with the Du Pont Chemical Company for five years following his graduation from the University of Chicago in 1938.——Dr. Louis E. Marshall, Brooklyn, who was recently separated from the army with the rank of lieutenant colonel after five and a half years of service, has been appointed director of laboratories at the House of the Good Samaritan Hospital, Watertown, effective January 1.

State Aid for Health Program.—A new state health program began on January 1 under an increase of $8,000,000 in state aid to New York City in 1947 and an increase of $2,090,000 for up state communities, according to budget estimates of the state health department. The program was provided last spring by the state legislature for accelerating the control of tuberculosis, stimulating the establishment of more county health departments and improving city health services. The increase in state aid, it is reported, has already resulted in the establishment of four county health districts in addition to six previously established. The state will pay one half the cost, not to exceed $2.50 a day, of providing hospital care for tuberculosis patients and one half the cost of public health programs approved by municipal health departments. It is expected that equality of treatment on both a qualitative and quantitative basis will be established throughout the state as soon as minimum standards for hospital care are established.

New York City

New Center for Cerebral Palsy.—The Cerebral Palsy Treatment and Training Center, 150th Street and St. Nicholas Place, opened January 17, the first such center in the metropolitan area. Sponsored by the Pediatric Foundation, the center will have a staff of physicians and therapists who will examine and treat cases and seek their causes. This establishment follows studies by the State Joint Legislative Committee on Cerebral Palsy.

Home Care for Cancer Patients.—Montefiore Hospital has instituted a project to test whether advanced cancer patients can be allowed to remain at home and at the same time be provided with the equivalent of hospital care. Patients will be provided with several visits a week by doctors from the hospital staff, daily nursing care by a visiting nurse, transportation to and from the dispensary and help with housework when necessary. The New York City Cancer Committee has given $30,000 in aid. It is estimated that home care will be one-third to one-half the cost of comparable care in the hospital. Dr. Ephraim M. Bluestone is director of the hospital.

Celebrate One Hundred and Twenty-Fifth Anniversary.—The Medical Society of the County of Kings and Academy of Medicine of Brooklyn will be 125 years old during 1947. The society began the celebration of the anniversary at a dinner honoring Dr. Thurman B. Givan, retiring president, at the Hotel St. George, Brooklyn, January 29. Dr. Morris Fishbein, Chicago, Editor of The Journal, spoke, as well as other medical and civic leaders. The society was organized in 1822 at a meeting in the home of Dr. Adrian Vandervcer in Flatbush. It established in 1844 now the oldest public medical library in the country and the only public medical library on Long Island, and built its own building in 1900.

Personal.—Dr. Edward C. Reifenstein Jr., formerly Harvard Medical School research fellow at the Massachusetts General Hospital, Boston, has been appointed research consultant to the Sloan-Kettering Institute for Cancer Research at the Memorial Hospital Cancer Center and also clinical research consultant to Ayerst, McKenna and Harrison, Ltd. He will carry on clinical research on the relation of glandular disturbances of cancer.——Dr. I. Newton Kugelmass has been appointed consultant nutritionist to the department of health and the department of hospitals, New York City.——Dr. Aaron Edwin Margulis has been appointed professor of bacteriology and director of the hospital and dispensary services of bacteriology in the New York Post-Graduate Medical School and Hospital, Columbia University, to succeed Dr. Ward J. MacNeal, deceased.

NORTH CAROLINA

Appointments at University of North Carolina.—The following professors have been added to the faculty of the University of North Carolina School of Medicine: Dr. Kenneth M. Brinkhous, formerly of the State University of Iowa College of Medicine, Iowa City; Dr. John B. Graham, instructor of pathology and resident of Cornell Medical Center, New York; Dr. William S. Randall, instructor in pathology and director of the pathological laboratory at Watts Hospital, Durham, N. C., and former chief of the laboratory, Walter Reed General Hospital, Washington, D. C.; Arthur V. Jensen, Ph.D., assistant professor of anatomy in charge of neuroanatomy, former research assistant at the Institute of Neurology, Northwestern University School of Medicine, Chicago; Fred L. Rights, assistant professor of bacteriology, formerly of the department of bacteriology, Columbia University College of Physicians and Surgeons; Dr. Frederick A. Blount, Pensacola, Fla., instructor in pharmacology, graduate of the University of Pennsylvania School of Medicine, Philadelphia, and Dr. John B. Riggsbee, instructor in anatomy, graduate of Vanderbilt University School of Medicine, Nashville, Tenn.

OHIO

Cleveland Diabetes Society.—At a meeting Dec. 9, 1946 the Cleveland Diabetes Society was formed under the leadership of Drs. Henry J. John, president, and Max Miller, secretary-treasurer. The society is patterned after the societies in New York and Philadelphia, and affiliation with the national association is planned.

Kelleys Island Needs a Doctor.—A house, office and $3,000 a year plus fees is being offered by the village of Kelleys Island to a physician who will practice in that community of some 500 residents located in Lake Erie not far from Sandusky. Following the disruption of telephone communications some time ago as the result of broken cables, emergency radio communication was established with the mainland. The Toledo *Blade* of January 3 stated that Kelleys Island was still without "an emergency doctor" despite appeals to various state organizations.

Aid to Preventive Medicine Department.—A $70,000 grant from the Cleveland Foundation has been made to Western Reserve University to aid in the operation of the Elisabeth Severance Prentiss department of preventive medicine. Of the total, $25,000 is to be paid immediately and the remainder in the amount of $15,000 a year for the next three years. The department of preventive medicine was created in 1945 by a gift of $606,000 from the estate of the late Mrs. Elisabeth Severance Prentiss, Cleveland. In addition to laying plans for cooperation with the community in a program of preventive medicine, the department is organizing and equiping a large laboratory to carry on research in infectious diseases. Hundreds of specimens of viruses and cultures obtained by the staff members while in military service will be available for experimental work.

PENNSYLVANIA

Rheumatic Heart Clinics Established.—The fifth Rheumatic Heart Clinic established in 1946 by the Pennsylvania Department of Health was opened recently in the Harrisburg Polyclinic Hospital. Its purpose is to register all patients under the age of 21 in Harrisburg and vicinity who are afflicted with rheumatic fever or rheumatic heart disease in order to develop an organized plan for diagnosis and treatment. Dr. Allen W. Cowley, Harrisburg, is director of the new clinic. The other four clinics are located in Altoona, Erie, Allentown and Williamsport.

UTAH

Western Society for Clinical Research.—At a recent meeting in San Francisco a new scientific medical society was launched with the purpose of providing annual meetings and discussions for investigators in clinical medicine and its allied fields. The meetings of this Western Society for Clinical Research are to fill the needs for scientific interchange of the West in a manner similar to those of the Central Society for Clinical Research in the Middle West and the Society for Clinical Investigation in the East. Two of the six counselors who were elected at the San Francisco meeting are members of the University of Utah School of Medicine, Salt Lake City: Drs. Charles E. McLennan, professor and head of the department of obstetrics and gynecology, and Hans H. Hecht, assistant professor, department of medicine. Dr. B. Valdemar Jager of the department of medicine reported on his study of the treatment and metabolic changes of certain types of arthritis, and Dr. Hecht presented the results of his and his associates' work on a new agent employed in the diagnosis and treatment of cardiovascular diseases.

WASHINGTON

University Organizes Clinical Departments.—Organization of clinical departments in the new University of Washington School of Medicine, Seattle, is being conducted by Dr. Edward L. Turner, dean. Dr. Henry N. Harkins, associate professor of surgery, has been appointed professor of surgery and executive officer of the department. It is anticipated that Dr. Harkins will assume his new duties about July 1. Others appointed as clinical professors of medicine are Drs. Edwin George Bannick, now chief of staff, Swedish Hospital, Seattle; Edwin S. Bennett, associate clinical professor, University of Southern California School of Medicine; Byron F. Francis, former medical director of Riverton Hospital for Chest Diseases, Seattle; Lester J. Palmer, member of the staff of Virginia Mason Hospital, Seattle, and Charles Edward Watts, consultant in medicine at the U. S. Marine Hospital, Seattle. Roscoe L. Pullen, formerly of Tulane University, New Orleans, has been appointed associate professor of medicine and director of hospital planning.

ALASKA

Personal.—Dr. Elaine A. Schwinge, Georgetown, S. C., has been appointed junior field physician for the Territorial Department of Health of Alaska.——The territorial health department has announced the resignation of Dr. N. Berneta Block, Juneau, as director of the division of maternal and child health and crippled children's services.

Sitka to Get New Orthopedic Hospital.—Approval has been granted by the Office of Indian Affairs, Washington, D. C., for a 50 bed orthopedic hospital at Sitka. A plan has been worked out for development of orthopedic facilities in the territory on a cooperative basis using the navy dispensary on Japanski Island at Sitka for facilities. Administration of the staff for the new hospital will be under the Alaska Native Service, and the hospital equipment and supplies will be installed and used on a loan basis from the territorial department of health, which will also supply technical personnel for the treatment of orthopedic cases on a consultant basis. Dr. C. Earl Albrecht, Juneau, health commissioner of Alaska, said 400 orthopedic cases, three fourths of them Indian, Eskimo and Aleut children, are now on the territorial roster.

PUERTO RICO

Laboratory to Make Vaccines.—The chief of the Bureau of Public Health of the Health Department of Puerto Rico, Dr. Oscar Costa-Mandry, announces that a new public health laboratory will be established near San Juan for the manufacture of vaccines and other products used by the department of public health. Dr. Costa-Mandry recently returned from the United States, where he made a survey of leading public health laboratories.

Membership in the Blue Cross.—More than 8,000 Puerto Ricans enrolled under the Blue Cross Hospitalization Plan on the island during the third quarter of 1946, according to official reports, bringing the total membership to 31,215 men and women eligible for Blue Cross benefits. A sharp increase in membership registered during the final quarter was the result of legislation which went into effect authorizing the government of Puerto Rico to appropriate funds to extend Blue Cross benefits to all government employees.

Proposed Hospital Program.—The Planning Board of Puerto Rico in its 1947-1952 financial program recommends to the governor and the legislature a vast plan for the construction of new hospitals and improvements to existing hospitals. According to Public Law No. 725 passed by the 79th United States Congress, Puerto Rico is included in the federal aid program for construction and enlargement of private and government hospitals. Under this legislation Puerto Rico will receive an allocation of funds amounting to $12,150,000 during the next five years. However, the insular government and private interests running nonprofit institutions will have to contribute two dollars for each dollar contributed by the federal government. The planning board estimates that private institutions will use about 30 per cent of the federal funds. Therefore it recommends an overall allocation of insular funds amounting to $16,750,000 for the next six years, out of which $5,553,000 is already allocated by different enabling acts passed by the insular legislature during the past two years. If this comprehensive program is approved by the governor and the insular legislature during its session in February, the following benefits accrue to the people of Puerto Rico: 1. The bed capacity for general hospitals will be increased 50 per cent, which will thus provide 3.6 beds per thousand inhabitants by the year 1953. 2. The bed capacity of the insular charity hospitals, or district hospitals, would be increased 75 per cent, and the recommended policy of 1 bed for each thousand inhabitants would be reached for each municipality on the island. Puerto Rico has 77 municipalities and a population now of over 2,100,000 inhabitants. 3. The number of beds available in all the tuberculosis hospitals on the island would be doubled, and the goal fixed by the insular department of health of 1 bed in each tuberculosis hospital for each death due to this disease would be reached. 4. The hospital facilities for mental and nervous diseases would be increased 75 per cent. The overcrowded situation has brought serious problems to these hospitals in Puerto Rico.

GENERAL

American College of Radiology.—The American College of Radiology and the Philadelphia Roentgen Ray Society will conduct a postgraduate course in radiology March 3 through April 4 in Philadelphia. Some of the subjects to be studied are certain neoplastic and inflammatory diseases, carcinoma of the head and neck, dosage calculation and tumor sensitivity in radiation therapy, carcinoma of the breast, blood and hemopoietic diseases, carcinoma of the genital and urinary tract and malignant and nonmalignant diseases of the skin.

Positions Open for Research in Psychiatry.—Twelve positions for research in psychiatry and related fields at the Western State Psychiatric Institute and Clinic have been established. The institute is a teaching and research hospital of the Pennsylvania mental hospital system, training psychiatrists, social workers, psychologists, nurses, occupational therapists and others for hospital and private fields. For further information write Dr. Grosvenor B Pearson, O'Hara and DeSoto streets, Pittsburgh 13.

Electroencephalographers to Meet in Montreal.—The Eastern Association of Electroencephalographers (The Journal, January 11, p. 117) will hold a meeting February 21-23 in the Montreal Neurological Institute, Montreal. At the first afternoon scientific session Dr. Derek E. Denny-Brown, Boston, will review the fundamental principles in electromyography. Saturday, February 22, Dr. Herbert Jasper, Westmount, Que., will introduce a seminar discussion on "Technics, Terminology and Electroencephalographers."

Pharmaceutical Manufacturers' Award. — The Mayo Foundation for Medicine, Education and Research at the University of Minnesota lately received the annual award of the American Pharmaceutical Manufacturers Association for its contributions to public health through fundamental research in medical sciences Isaiah Bowman, Ph D., president of Johns Hopkins University, presented the parchment scroll to Dr. Donald C. Balfour, director of the foundation. The award, made annually on the recommendation of a scientific advisory board, was won last year by the Rockefeller Foundation.

Interne and Medical Students' Convention.—The twelfth annual convention of the Association of Internes and Medical Students met in Philadelphia, December 27-29. Among the speakers were Dr. Isaac Starr, dean, University of Pennsylvania School of Medicine; Dr. Pascal F. Lucchesi, director, Philadelphia General Hospital; Dr. I. S. Ravdin, professor of surgery, University of Pennsylvania School of Medicine; Dr. Edward Weiss, professor of clinical medicine, Temple University School of Medicine; Dr. Stuart Mudd, professor of bacteriology, University of Pennsylvania School of Medicine, and Dr. Milton Roemer, U. S. Public Health Service, Washington, D. C.

National Conference on Medical Service.—The twentieth annual meeting of the National Conference on Medical Service will open at the Palmer House, Chicago, Sunday, February 9, with registration at 9 o'clock.

9.30 Call to order and address of the president, Dr. Cleon A. Nafe, Indianapolis
9.50 Dr. Joseph S. Lawrence, Washington, D. C., The Eightieth Congress.
10.10 Dr. Herman E Hilleboe, U. S Public Health Service, Washington, D. C., The Operation of Public Law 725 The National Hospital Construction Act
10 40 Discussion.
11.00 Dr. Paul B. Magnuson, Veterans Administration, Washington, D. C., Veterans' Care: Where Do We Go From Here?
11.30 L S. Kleinschmidt, Chicago, Medical Cooperatives.
11.50 Thomas A. Hendricks, Chicago, Developments in the Council on Medical Service.
12.15 Luncheon—Speaker to be announced.
2 15 Open Forum: Moderator, Dr. Creighton Barker, New Haven, Conn.; speakers, Drs. Duncan W. Clark, associate dean, Long Island College of Medicine; Byrl R. Kirklin, secretary, Advisory Board for Medical Specialties, Rochester, Minn.; Leo G. Christian, vice chief of staff, St. Lawrence Hospital, Lansing, Mich.; Thomas P. Murdock, chief of staff, Meriden Hospital, Meriden, Conn.; subject, Modern Influences in Medical Practice: Undergraduate Medical Education, Trends Toward Specialization; General Practitioners in Hospitals; Hospital Staff Organization.

Lasker Awards in Planned Parenthood. — The third Annual Lasker Awards of the Planned Parenthood Federation of America were presented to Drs. Alan F. Guttmacher, Baltimore, and Abraham Stone, New York, January 25. The award, a medallion and $500, recognizes Dr. Stone's devotion of thirty years to clinical work, teaching and marriage counseling. He and his late wife gave New York City its first marriage counseling center, which has served as a model for those in other American communities. He also founded and edits the medical periodical devoted to this subject, *The Journal of Human Fertility*, and is director of the Margaret Sanger Research Bureau. Dr. Guttmacher received the award in recognition for his successful work in gaining the support of physicians, the clergy and educators. He is a graduate of Johns Hopkins School of Medicine, Baltimore, where he is now associate professor of obstetrics and gynecology, and the author of two books and co-editor with Dr. Stone. The 1946 winners of the awards were Drs. Robert L. Dickinson, New York, and Irl C. Riggin, Richmond, Va., health commissioner of the Virginia Department of Health.

American Board of Surgery.—At a meeting of the American Board of Surgery in Philadelphia Dec. 13-14, 1946, the following resolution was adopted.

> The organization of the American Board of Surgery was completed on Jan. 9, 1937. A plan of this organization had been carefully studied by a general committee representative of certain general and sectional surgical societies called together through the initiative of the American Surgical Association. As a result of the deliberations of this general committee a tentative plan of organization was adopted This plan was reported to the cooperating surgical societies and was approved with the understanding that the board, when organized, would have the power to change or modify the proposed plan as it saw fit This board has been created in accordance with the action of the Advisory Board for Medical Specialties as approved by the Council on Medical Education and Hospitals of the American Medical Association, which has named certain specialty fields as being suitable to be represented by such boards. These boards have the twofold purpose of certifying those found to be qualified after meeting reasonable requirements and of improving existing opportunities for the training of specialists within the field concerned This is to be done for the protection of the public and the good of the specialty.

The cooperating surgical societies selected jointly to form the board appointed their representatives as follows: American Surgical Association, 3; surgical section of the American Medical Association, 3; American College of Surgeons, 3; Southern Surgical Association, 1; Western Surgical Association, 1; Pacific Coast Surgical Association, 1; New England Surgical Society, 1; total, 13

The term of membership is for six years Each cooperating association has the appointing power of its representatives subject to the approval of the board During the ten years in which the board has functioned, twenty-seven different surgeons have served full or partial terms of membership. The board has discharged its responsibilities by conducting examinations and has issued certificates of qualification to those surgeons who have met certain clearly specified educational requirements and have passed successfully its examinations In discharging its responsibilities, the primary purpose of the board has been to establish and maintain a high standard in the education and training of the young surgeon. The American Board of Surgery is not concerned with measures that might gain special privileges of recognition for its certificants in the practice of surgery. It is neither the intent nor has it been the purpose of the board to define requirements for membership on the staffs of hospitals. The prime object of the board is to pass judgment on the education and training of broadly competent and responsible surgeons —not who shall or shall not perform surgical operations. The board specifically disclaims interest in or recognition of differential emoluments that may be based on certification.

CORRECTION

Schweizerische medizinische Wochenschrift.—The index and abstracts from the *Schweizerische medizinische Wochenschrift* appearing on page 141 of The Journal of January 11 were taken from the August 31 rather than the August 24 issue of that publication.

Marriages

Bruno J. Romeo, Jackson Heights, N. Y., to Miss Evelyn Cordell of Asheville, N. C., and Washington, D. C., June 22.

Thaddeus A. Nigborowicz, Gallitzin, Pa, to Miss Blanche Elizabeth Romerowicz of Altoona July 14.

Hugh Lewis Williams, Martinsville, Ind., to Miss Marian Mead Reynolds of Scio, N. Y., July 27.

David B. Kagan, Pittsfield, Mass., to Miss Irene Sylvia Besdin of Syracuse, N. Y., in August.

Howard Lamar Holley, Marion, Ala., to Mrs. Martha H. Gross of Birmingham in September.

Carroll H. Smith Jr., La Mesa, Calif., to Dr. Margaret Stebbins of Pittsburgh July 27.

Robert M. Hoyne, Urbana, Ill, to Miss Avonne Andrews of Champaign July 26.

Milton M. Coplan, Miami, Fla., to Miss Mildred Elizabeth Hunt July 14.

Deaths

John Staige Davis ⊕ widely known plastic surgeon died at his home in Baltimore, Dec. 23, 1946, aged 74. Dr. Davis was born in Norfolk, Va., Jan. 15, 1872. After graduating at St. Paul's School, Garden City, L. I., he entered the Sheffield Scientific School at Yale University for premedical work under Professor Russell H. Chittenden, graduating in 1895. At Yale he was captain of the Sheffield Military Company and an editor of the *Yale Scientific Monthly*. He then went to Johns Hopkins University Medical School, Baltimore, graduating in 1899, and became a resident house officer in Johns Hopkins Hospital, serving under Drs. Osler, Halsted and Kelly. Later he was resident surgeon at Union Memorial Infirmary under Dr. J. M. T. Finney for three years.

At the completion of his hospital service Dr. Davis began private practice and was connected with the surgical dispensary of Johns Hopkins Hospital and with the Robert Garrett Children's Hospital. In 1908 he limited his practice to surgery, with particular attention to the then undeveloped field of plastic surgery. He is said to have been the first surgeon in the United States to specialize in general plastic surgery. Since 1923 he had been associate professor of surgery (plastic) at his alma mater, where in June 1946, after relinquishing some of his more arduous duties, he had been named associate professor of surgery emeritus. He had been instructor in anatomy and in operative surgery at the College of Physicians and Surgeons in Baltimore and professor of surgery at the Woman's Medical College of Baltimore. He was a founder member of the American Board of Plastic Surgery (chairman at the time of his death), the American College of Surgeons and the American Board of Surgery.

Dr. Davis served as vice president of the American Surgical Association and president of the American Association of Plastic Surgeons, the Southern Surgical Association and the American Association of Plastic Surgeons. He was a member of the Interurban Surgical Association, Surgical Research Society, American Association for the Surgery of Trauma, American Association of Reconstructive and Plastic Surgeons, the Southern Medical Association and others. During World War I he was a captain in the medical corps of the U. S. Army and was on duty in Baltimore as chairman of the examining board of the Medical, Sanitary and Veterinary Corps of Maryland. During World War II he was a member of the Plastic and Maxillofacial Surgery Committee of the Medical Section of the National Research Council, consultant to the Secretary of War and consultant in plastic surgery to the surgeon general.

Dr. Davis was visiting plastic surgeon at the Johns Hopkins Hospital, the Union Memorial Hospital, the Hospital for Women of Maryland and the Children's Hospital School. For about ten years he carried out research problems in the Hunterian Laboratory of Experimental Surgery and published articles dealing with these investigations. Dr. Davis was the author of "Plastic Surgery, Its Principles and Practice" and numerous articles in the field of plastic surgery. He was a member of the Maryland Club, Bachelors Cotillon, Yale Club of New York, Military Order of the World War, Sons of the American Revolution and the Maryland Historical Society.

William Hale ⊕ Utica, N. Y.; born in Gananoque, Ont., Canada, in 1886; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1910; president of the Medical Society of the State of New York; past president and secretary of the Oneida County Medical Society; fellow of the American College of Surgeons; member of the House of Delegates of the American Medical Association, 1944-1945; a charter member of the Utica Academy of Medicine; commissioned in the British army and attached to a hospital reinforcement group during World War I, serving overseas, winning the British Military Cross; organized preschool clinics for the Child Welfare Department of Utica and helped bring about the merger of the Utica Visiting Nurse Association and the Child Welfare Association, serving the joint organization as medical director for four years; consulting surgeon at Utica State Hospital; served as president and as surgeon of the staff of the Faxton Hospital; for twenty years surgeon to the New York Central Railroad Company, Delaware, Lackawanna & Western Railroad Company and the New York, Ontario & Western Railroad Company; found dead in a parking lot at the rear of his office, January 16, aged 60, of heart disease.

Philip Arzt Kees ⊕ West Springfield, Mass.; University of Minnesota Medical School, Minneapolis, 1936; received master of science degree in surgery from the Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania, Philadelphia; interned at the Los Angeles County Hospital in Los Angeles; served a residency at the William W. Backus Hospital in Norwich, Conn.; diplomate of the National Board of Medical Examiners; fellow of the Springfield Academy of Medicine; began active duty as a captain in the medical corps, Army of the United States, on March 1, 1942; service terminated with the rank of major in February 1946; chief of surgery at army air base hospitals, orthopedic surgeon of an evacuation hospital and operating surgeon of a paratroop combat team (11th Airborne) in the Pacific; wounded three times; decorated with the Purple Heart, Bronze Star for valor and the Silver Star for gallantry in action; on the staffs of the Mercy and Wesson hospitals; died Nov. 4, 1946, aged 38, of a skull fracture received in an automobile accident.

Carl Clifton Garver ⊕ Commander, M. C., U. S. Navy, Atlanta, Ga.; Emory University School of Medicine, Atlanta, 1932; formerly an intern and chief resident surgeon at the Grady Hospital; served as chief surgeon for the Georgia Power Company; commissioned a lieutenant in the medical corps of the U. S. Naval Reserve; began active duty in February 1941; promoted to lieutenant commander and commander; transferred to regular navy; after recruiting duty in Macon went to sea aboard the U. S. S. *Atlanta* and survived the sinking of the vessel in sea action off Guadalcanal; saw duty aboard five other ships before returning to the United States; received a letter of commendation from Admiral William Halsey for zealous performance of duty under severe combat conditions; drowned Sept. 10, 1946, aged 43, when he apparently fell from his private boat en route from Parris Island, S. C., to Jacksonville, Fla.

Charles Marshall Davison ⊕ Chicago; born on April 16, 1896; University of Illinois College of Medicine, Chicago, 1920; at one time assistant and associate in surgery at his alma mater; associate professor of surgery at the Northwestern University Medical School, where he had been assistant professor of surgery; professor of surgery at the Cook County Graduate School of Medicine; member of the Western Surgical Association and of the founders group of the American Board of Surgery; fellow of the American College of Surgeons; attending surgeon and medical director of the University Hospital, where he served an internship; chairman of the department of surgery, formerly an intern and from Dec. 1, 1939 to May 16, 1943 medical director of the Cook County Hospital, where he had joined the surgical staff in 1926; died Dec. 16, 1946, aged 50, of coronary disease.

Carl Marion Sautter, New York; Indiana University School of Medicine, Indianapolis, 1911; specialist certified by the American Board of Otolaryngology; formerly clinical professor of rhinology and laryngology at the New York Polyclinic Medical School and Hospital; member of the American Laryngological, Rhinological and Otological Society; served during World War I; on the staffs of the Lawrence Hospital in Bronxville, New York Orthopedic Dispensary and Hospital, St. Luke's Hospital and the Misericordia Hospital; died Nov. 3, 1946, aged 59, of carcinoma of the prostate.

Edward C. Leverett Adams ⊕ Columbia, S. C.; Maryland Medical College, Baltimore, 1903; Medical College of South Carolina, Charleston, 1904; served during the Spanish-American War and in France during World War I; died Nov. 1, 1946, aged 70, of cirrhosis of the liver.

Mordecai Lee Barefoot, Dunn, N. C.; University of Maryland School of Medicine, Baltimore, 1911; died Nov. 27, 1946, aged 64, of diabetes mellitus and chronic nephritis.

Charles P. Bartley, Excelsior Springs, Mo. (licensed in Missouri in 1900); died Oct. 14, 1946, aged 79.

Louis De Keyser Belden ⊕ Indianapolis; Johns Hopkins University School of Medicine, Baltimore, 1915; interned at the Roosevelt and Bellevue hospitals in New York; a medical officer during World War I; on the staffs of St. Vincent's and City hospitals; died Nov. 28, 1946, aged 57, of coronary thrombosis.

Clarence Conrad Bosselmann, Plymouth, Ind.; Indiana University School of Medicine, Indianapolis, 1935; member of the American Medical Association; interned at the Lutheran Hospital; served as county coroner and in the U. S. Navy during World War II; on the staff of the Parkview Hospital; died Nov. 7, 1946, aged 36.

Norbert Odeon Bourque, Chicago; National Medical University, Chicago, 1904; University of Nashville (Tenn.) Medical Department, 1907; Université de Lausanne Faculté de Médecine, Switzerland, 1923; on the staff of the Mother Cabrini Hospital, where he died Nov. 23, 1946, aged 69, of auricular fibrillation and coronary sclerosis.

Albert Fessenden Bronson ⊕ De Land, Fla.; Bellevue Hospital Medical College, New York, 1885; member of the Medical Society of the State of Pennsylvania; died Dec. 10, 1946, aged 86, of arteriosclerosis.

William Edward Butt, Viroqua, Wis.; Chicago Homeopathic Medical College, 1895; died Nov. 20, 1946, aged 76, of myocarditis.

John Dennis Carr, Whitfield, Miss.; Jefferson Medical College of Philadelphia, 1896; member of the American Medical Association; served overseas during World War I and on the medical staffs of Kansas, Arizona and Mississippi State hospitals; formerly superintendent of North Dakota State Hospital in Jamestown; died Nov. 29, 1946, aged 74, of coronary thrombosis.

Edward Wight Clarke ⊕ Hastings-on-Hudson, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1919; past president of the Bergen (N. J.) County Medical Society; on the staff of the Englewood (N. J.) Hospital; died in the Columbia-Presbyterian Medical Center in New York, Nov. 19, 1946, aged 54.

Henry Little Clarke, Brewster, Mass.; Boston University School of Medicine, 1884; died in Boston Nov. 17, 1946, aged 87, of arteriosclerosis and fracture of the left femur.

Vincent Jacob Cohenour ⊕ Joliet, Ill.; Northwestern University Medical School, Chicago, 1901; served during the Spanish-American War and as county physician; died Nov. 27, 1946, aged 73, of uremia.

James A. Cravens, Greenfield, Ill.; Washington University School of Medicine, St. Louis, 1896; for many years on the staff of the Jacksonville (Ill.) State Hospital; died at Our Saviour's Hospital, Jacksonville, Nov. 30, 1946, aged 74, of coronary thrombosis.

John B. Davis, Ottawa, Kan.; Medical College of Ohio, Cincinnati, 1894; died Oct. 2, 1946, aged 77, of coronary thrombosis.

Frank Herbert Deane, Berwyn, Ill.; Dearborn Medical College, Chicago, 1906; for many years on the board of health; served overseas during World War I; examiner for the Selective Service Board and awarded a presidential citation for special services rendered during World War II; died Nov. 20, 1946, aged 77, of coronary disease.

William G. Doern, Daytona Beach, Fla.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1902; member of the American Medical Association; professor of anatomy at the Milwaukee Medical College; Spanish-American War veteran; medical examiner of recruits in Milwaukee during World War I; died in Milwaukee Nov. 3, 1946, aged 68, of heart disease.

Joseph Donohoo, Tulsa, Okla.; University of Nashville (Tenn.) Medical Department, 1892; died in a local hospital Nov. 1, 1946, aged 77, of hypertensive heart disease.

David G. Elder, Chickamauga, Ga.; Atlanta Medical College, 1886; member of the American Medical Association; died recently, aged 82.

George William Farrar, Fall River, Kan.; University Medical College of Kansas City, Mo., 1895; died in St. Francis Hospital, Wichita, Oct. 20, 1946, aged 76.

Frank W. Foster, Hannibal, Mo.; Louisville (Ky.) Medical College, 1894; died Oct. 13, 1946, aged 74.

Broox Cleveland Garrett ⊕ Shreveport, La.; Tulane University of Louisiana School of Medicine, New Orleans, 1913; served during World War I; member of the Southeastern Surgical Congress; fellow of the American College of Surgeons; past president of the Shreveport Medical Society; member of the board of Caddo-Shreveport Health Unit; member staff, which he served as president, of Schumpert Sanitarium; on the visiting staff of Charity Hospital; died Nov. 15, 1946, aged 58.

Albert Alexander Gebhardt, St. Louis; St. Louis College of Physicians and Surgeons, 1909; served during World War I; found dead Nov. 12, 1946, aged 73.

Mark Albert Glaser ⊕ Los Angeles; University of California Medical School, San Francisco, 1923; interned at San Francisco County Hospital; member of the Los Angeles Neurological Society, Hollywood Academy of Medicine, Western Association of Industrial Physicians and Surgeons and the American Association of Industrial Physicians and Surgeons; on the staffs of Kern General Hospital, Bakersfield, Hollywood, Methodist and Cedar of Lebanon hospitals; died in Salt Lake City Nov. 2, 1946, aged 49.

George W. Goss, Los Angeles; Saginaw (Mich.) Valley Medical College, 1899; died Nov. 4, 1946, aged 76.

John L. Hadley, Oil City, Pa.; Cleveland Medical College, Homeopathic, 1897; member of the American Medical Association; past president of the Venango County Medical Society; member of the board of directors of the Standard Life Insurance Company of America; formerly member of the city board of health; served as vice president and member of the staff of the Oil City General Hospital, where he died Nov. 13, 1946, aged 81, of cardiorenal vascular disease.

John Kennedy Hanna, Grand Rapids, Mich.; University of Michigan Medical School, Ann Arbor, 1884; died in the Butterworth Hospital Nov. 19, 1946, aged 88, of carcinoma of the prostate and injuries received in a fall.

Charles D. Harrington ⊕ Wayzata, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1895; died Nov. 18, 1946, aged 76, of carcinoma of the lung.

Caleb Wooster Harris, Bishopville, S. C.; University of Nashville (Tenn.) Medical Department, 1894; Vanderbilt University School of Medicine, Nashville, 1894; served in the state legislature from Lee County from 1907 to 1911; died Oct. 20, 1946, aged 75.

Martin Hassenmiller, West Baden Springs, Ind.; Louisville (Ky.) Medical College, 1901; member of the American Medical Association; past president of the West Baden National Bank; died in Louisville, Ky., Nov. 18, 1946, aged 77, of cerebral hemorrhage.

Ira H. Hawes, Arcanum, Ohio; Medical College of Ohio, Cincinnati, 1893; member of the American Medical Association; on the staff of Wayne Hospital in Greenville; died Nov. 27, 1946, aged 79, of cerebral hemorrhage.

Edgar Marion Hazlett, Washington, Pa.; Jefferson Medical College of Philadelphia, 1902; member of the American Medical Association; for many years president and on the board of the Washington County Tuberculosis Association; member of the local Civil Service Board and board of health; on the staff of the Washington Hospital, where he died Nov. 8, 1946, aged 76, of cerebral hemorrhage.

Charles Martin Hutchinson, Cambridge, Mass.; Dartmouth Medical School, Hanover, N. H., 1894; member of the American Medical Association; school physician; on the staff of the Cambridge Hospital, where he died Nov. 26, 1946, aged 76, of paralytic ileus following an operation for carcinoma of the sigmoid.

Stella Elora Chapman Jacobi, Omaha; University of Michigan Homeopathic Medical School, Ann Arbor, 1885; died Nov. 12, 1946, aged 87, of cerebral hemorrhage.

Norman Gilchrist James, Hayneville, Ala.; Medical College of Alabama, Mobile, 1898; member of the American Medical Association; died Nov. 19, 1946, aged 72, of Hodgkin's disease.

Simeon Lambright, Danville, Ill.; National Normal University College of Medicine, Lebanon, Ohio, 1892; member of the American Medical Association; died in Mishawaka, Ind., Nov. 9, 1946, aged 83, of cardiovascular disease.

Mial R. Lyman, Bad Axe, Mich.; Eclectic Medical Institute, Cincinnati, 1883; died Nov. 2, 1946, aged 90.

James Riley McCollum, St. Marys, W. Va.; College of Physicians and Surgeons, Baltimore, 1900; member of the American Medical Association; honorary member of the Academy of Medicine of Parkersburg and the West Virginia State Medical Association; formerly member of the West Virginia House of Delegates; in September 1946 was unanimously named as the "Good, Good Neighbor of Pleasants County"; died Nov. 15, 1946, aged 72, of coronary occlusion.

Edward Aloysius McCullough, Meriden, Conn.; Harvard Medical School, Boston, 1894; served during the Spanish-American War; died in the Meriden Hospital Nov. 24, 1946, aged 78, of heart disease.

Royal Albert McCune ⊕ Surgeon Lieutenant Commander, U. S. Navy, retired, Central Valley, N. Y.; University and Bellevue Hospital Medical College, New York, 1904; U. S. Naval Medical School, 1928; entered the U. S. Navy in December 1920 and retired on Feb. 1, 1941 on attaining the statutory retirement age; died in Watertown, Mass., Nov. 23, 1946, aged 69, of carcinoma of the larynx.

Joseph John Manley, Cleveland; St. Louis University School of Medicine, 1929; interned at St. Alexis Hospital in Cleveland, where he was resident physician at the Charity Hospital; began active duty as a captain in the medical corps, Army of the United States, in October 1942 and service terminated in August 1943; died in the U. S. Marine Hospital recently, aged 46, of arteriosclerotic heart disease.

Henry B. Mehrmann, Oakland, Calif.; California Medical College, Oakland, 1885; member of the American Medical Association and the Alameda County Sanity Commission; served as county coroner and as Alameda County Public Administrator; died in the Merritt Hospital Nov. 4, 1946, aged 82, of arteriosclerotic heart disease.

Lewis Franklin Mobley ⊕ Summitville, Ind.; Medical College of Indiana, Indianapolis, 1902; served overseas during World War I; on the staff of St. John's Hospital in Anderson; died in the Ball Memorial Hospital, Muncie, Nov. 8, 1946, aged 71, of cerebral hemorrhage.

George Wilson Montgomery, Louin, Miss.; University of Mississippi School of Medicine, University, 1910; served during World War I; died Nov. 27, 1946, aged 69, of cerebral hemorrhage.

West Montgomery, Mentor, Ohio; Starling Medical College, Columbus, 1885; past president, vice president and secretary-treasurer of the Lake County Medical Society; justice of the peace; served as mayor of Ada; on the staff of the Lake County Memorial Hospital in Painesville; died recently, aged 88, of cerebral thrombosis.

Henry Paul Murphy, Philadelphia; Medico-Chirurgical College of Philadelphia, 1905; died Nov. 9, 1946, aged 67, of heart disease.

Harry Manlove Nutter, Philadelphia; Baltimore University School of Medicine, 1903; for many years on the staff of the Jefferson Hospital; died in Oaklyn, N. J., Nov. 12, 1946, aged 71, of coronary thrombosis.

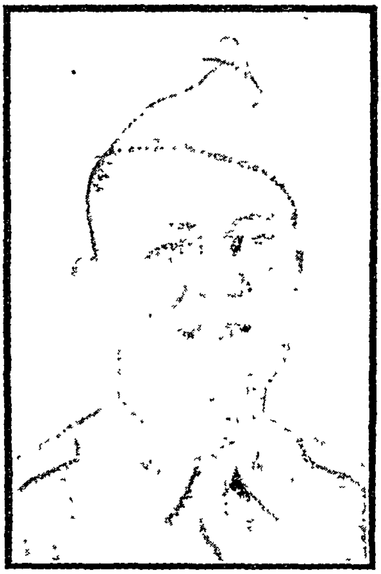
Benjamin Stuart Paschall, Seattle; University of Pennsylvania Department of Medicine, Philadelphia, 1903; died Nov. 22, 1946, aged 67.

James M. Pedicord, Zanesville, Ohio; Ohio Medical University, Columbus, 1893; served as county coroner; formerly on the staffs of the Good Samaritan and Bethesda hospitals; died recently, aged 78, of cardiac decompensation.

Benjamin Anthony Pizzuto, Jersey City, N. J.; Georgetown University School of Medicine, Washington, D. C., 1938; interned at St. Francis Hospital in Jersey City and New York; served during World War II; died recently, aged 33.

Ernest Otto Pucklitsch, Cincinnati; Miami Medical College, Cincinnati, 1894; died Nov. 2, 1946, aged 77, of coronary occlusion.

Jack Roy Tayman Rafter ⊕ Berkeley Springs, W. Va.; Medical College of Virginia, Richmond, 1940; member of the Kentucky State Medical Association; interned at the Good Samaritan Hospital in Lexington, Ky., where he had been resident physician at the University of Kentucky from 1941 to 1943, when he became affiliated with the Fuller-Gilliam Hospital in Mayfield, serving until 1945; died in an automobile accident Oct. 22, 1946, aged 32.



Capt. Wilbert W. Buckhold M. C., A. U. S., 1907-1944

Leonard Sigmund Rau, New York; Bellevue Hospital Medical College, New York, 1885; fellow of the American College of Surgeons; served as police surgeon and health officer in Lawrence, N. Y.; for many years president of St. Joseph's Hospital in Far Rockaway, where he had been on the staff; served on the staffs of the Meadowbrook Hospital in Hempstead, N. Y., and the Nassau Hospital in Mineola, N. Y.; died Oct. 31, 1946, aged 82.

Joseph C. Reeder, Montezuma, Ind.; Eclectic Medical Institute, Cincinnati, 1886; died Nov. 28, 1946, aged 91, of uremia.

Frederick Knox Reynolds, Birmingham, Ala.; Birmingham Medical College, 1901; died Nov. 4, 1946, aged 75.

John I. Rinne Jr., Indianapolis; Indiana University School of Medicine, Indianapolis, 1936; member of the American Medical Association; interned at the Indianapolis City Hospital; interned at the New York Hospital in New York, where he served a residency; during World War II attained the rank of lieutenant commander, after three and one-half years in the U. S. Navy, including eighteen months overseas; killed in an automobile accident Nov. 9, 1946, aged 34.

David N. Robb, Ypsilanti, Mich.; Detroit College of Medicine and Surgery, 1930; member of the American Medical Association; interned at the City of Detroit Receiving Hospital; served as health officer of Ypsilanti and as county coroner; died Nov. 12, 1946, aged 48.

Joseph Rosenfeld, Youngstown, Ohio; Long Island College Hospital, Brooklyn, 1915; fellow of the American College of Physicians; during World War I served as a captain in Russia with an American ambulance corps and was decorated for bravery, receiving the French Croix de Guerre as well as the St. Ann's Cross from the provisional government of Archangel, Russia; died Nov. 4, 1946, aged 53, of tumor of the lung and pleura.

William John Garvey Salmon, Old Forge, Pa.; College of Physicians and Surgeons, Baltimore, 1908; member of the American Medical Association; deputy coroner of Lackawanna County; medical examiner in the schools of Old Forge; served as Selective Service examiner for Old Forge and Clarks Summit during World War II; one of the organizers of the Miners' and Merchants' Bank; died Nov. 18, 1946, aged 65.

Paul Francis Sarubbi, New York; Eclectic Medical College, Cincinnati, 1915; served as police surgeon; died in St. Vincent's Hospital Nov. 28, 1946, aged 56, of liposarcoma.

Otto Ransom Spigler ⊕ Terre Haute, Ind.; Hospital College of Medicine, Louisville, 1902; served during World War I; fellow of the American College of Surgeons; on the staffs of St. Anthony's and Union hospitals; surgeon, St. Mary of the Woods School and Chicago, Milwaukee, St. Paul and Pacific Railway; vice president of the Terre Haute Savings Bank; died Nov. 28, 1946, aged 71, of coronory occlusion.

James Oscar Starr, Greenville, Ohio; Starling Medical College, Columbus, 1901; formerly vice president and secretary of the Darke County Medical Society; died in Dayton recently, aged 77, of arteriosclerosis.

John Joseph Thomas, Ansonia, Conn.; Fordham University School of Medicine, New York, 1921, member of the American Medical Association; interned at St. Catherine's Hospital in Brooklyn; on the staff of the Griffin Hospital in Derby, where he died Oct. 14, 1946, aged 49.

William Alonzo Tolson, Washington, D. C.; Howard University College of Medicine, Washington, 1906; died Nov. 29, 1946, aged 62, of carcinoma of the stomach.

Roscoe Samuel Van Pelt ⊕ Los Angeles; Northwestern University Medical School, Chicago, 1909; died in Guadalajara, Mexico, Nov. 13, 1946, aged 65, of heart disease.

Charles Edwin Verdier, New Orleans; Hahnemann Medical College and Hospital of Philadelphia, 1904; medical director of the Public Health Institute, which he was instrumental in founding; major in the medical corps of the U. S. Army during World War I and later a major of the Louisiana National Guard; died Nov. 17, 1946, aged 63.

Joseph P. Walsh ⊕ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1895; served as a major in the medical corps of the U. S. Army during World War I; past president of the Pennsylvania Society for the Prevention of Tuberculosis; member of the American College of Chest Physicians; associated with the Henry Phipps Institute for Study, Treatment and Prevention of Tuberculosis, St. Agnes Hospital and White Haven (Pa.) Sanatorium; died Oct. 23, 1946, aged 75, of coronary sclerosis.

KILLED IN ACTION

Wilbert William Buckhold, Blackey, Ky.; University of Louisville School of Medicine, 1933; served as health director of Meade County; began active duty as a first lieutenant in the medical reserve corps of the U. S. Army in August 1940; promoted to captain; stationed at Fort Knox, Ky., till late in 1941, when he was transferred to the U. S. Army Sternberg General Hospital in Manila; believed to have been captured on Corregidor; killed in action in the South China Sea Oct. 24, 1944, aged 37, as the result of the sinking of a Japanese ship on which he was being transported while a prisoner of war.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan 11, 1947

Investigation of the Causation of Rheumatoid Arthritis

An attempt on a large scale to discover the cause of rheumatoid arthritis was announced by Lord Horder in presiding at the annual meeting of the Empire Rheumatism Council On the recommendation of the scientific advisory committee the council has appointed two whole time registrars to investigate the factors in the causation of rheumatoid arthritis It has been decided to begin with 100 token cases If this preliminary piece of clinical research is promising, it is intended to investigate 1,000 cases A carefully prepared questionnaire and case note has been produced by the committee, which will facilitate the revelation and correlation of new facts in connection with rheumatoid disease This investigation has been in progress for about three months From it the committee hopes that there will emerge the lines on which specific research should be undertaken This is the first time that an attempt has been made by a uniform method of approach to discover the cause of rheumatoid arthritis—a disease of which, while being the most crippling, we know least So far from 70 to 80 of the first 100 cases have been investigated in hospitals in or near London An indication of the thorough nature of the investigation into each case is the fact it takes about four hours to fill in one questionnaire When the first hundred token cases have been completed it is hoped, if sufficient funds are available, to appoint four more registrars to complete the investigation It is estimated that it will take six months to complete the first hundred cases with an equal number of controls The other cases, with their controls, will be drawn from other parts of the country, so that it can be seen whether the incidence of the disease is higher in one place than in another and whether local conditions affect it

The Interference of Bureaucracy in Medical Work

If there is one thing more than another which the profession dreads in the working of the National Health Service it is bureaucratic interference Some bad examples of this interference, though not in connection with the act, have recently come to light and are regarded as a foretaste of what to expect under the act They have excited widespread condemnation in the profession and regret that they did not occur in time to be known to all voters in the plebiscite whether to negotiate or not with the government It is maintained that many who voted "Yes" would have voted "No" if they had had such examples of interference before them One bad example, the attempt of the Willesden Borough Council to force the doctors and nurses employed by it to join a trade union under penalty of dismissal, has been reported in a previous letter An equally bad example is reported by a doctor in the current issue of the *British Medical Journal* He had under care a patient suffering from carcinoma of the esophagus who was discharged from the hospital after gastrostomy had been performed, the growth having been found irremovable The patient had lost over 12 6 Kg in weight, and the hospital dietetic expert, in agreement with the consulting surgeon, decided that he should have 2 ounces (60 Gm) of fat daily in the form of butter or margarine As the dietetic restrictions of the war still continue, this could be obtained only by the sanction of the food authorities A special form had to be filled in by the doctor giving full particulars of the patient's condition and the medical reasons for the extra ration The local food officer granted the extra fat, but he had to report the matter to headquarters and a few days later received a reply stating that "our medical officers are of opinion that in cases of gastrostomy the important point is that the food chosen is such as will go through the gastrostomy tubes In their opinion there is no need for extra butter in such cases, as there is no call for a lubricant" They offered instead a priority allowance of 2 pints (1,000 cc) of milk and three eggs per week The doctor then wrote to Dr Edith Summerskill, parliamentary secretary to the Ministry of Food, because he felt that it was wrong to reduce his patient's fat ration, as he was only just holding his own in weight He pointed out that the patient was not ordered butter as a lubricant for swallowing but as supplying extra fat as considered necessary by the dietetic expert Also the ministry had missed the point that the extra fat was necessary to maintain life Dr Summerskill replied stating that the refusal was "strictly in accordance with the recommendation of our medical advisers," but "on compassionate grounds" an extra 2 ounces of butter weekly would be allowed The doctor indignantly comments on describing thus what was necessary to maintain life The patient did not live much longer Such are the mistakes made by officialdom when it interferes with the work of the physician

The Failure of Breast Feeding

One of the tragedies of our civilization is the failure of breast feeding In the *Archives of Disease in Childhood* (**21**:1 [March] 1946) Harold Waller tries to determine why failure occurs in about half the mothers The statistics of the Ministry of Health show that 80 per cent of the babies leaving maternity hospitals and 95 per cent of those born outside are wholly breast fed at the end of the first fortnight of life, yet three months later only 50 per cent are still breast fed Primiparas contribute largely to the failures Of 436 primiparas seen consecutively at infant welfare centers in East London 28 per cent at the end of one month, 38 per cent at the end of two months and 42 per cent at the end of three months had ceased to feed their children, giving as a reason only that "the milk left them" Waller gives two major reasons The first is that the nipple is structurally defective, but he believes that this defect can be easily remedied by wearing a glass shield with a controlled opening, which is firmly supported over the breast so as to press the nipple through the opening The second reason is that the breasts develop a high milk pressure and become hot and heavy and enlarged to perhaps twice their size The skin is tightly stretched and glistening, and the veins are prominent At the height of the engorgement milk cannot be obtained by the child, and only with difficulty is it removed artificially The mother feels great discomfort and suckling damages the nipples and may lead to abscess of the breast

The treatment in the extreme stage of engorgement is manual relief of the breast by the mother or nurse, who with thumb and finger compresses the lacteal sinuses The excess of milk is given to the child Waller's practice is to prevent this stage from developing by teaching all mothers to massage the breasts during the last stages of pregnancy so that if there is any trouble she can treat herself

Cancer Research

At the annual meeting of the British Empire Cancer Campaign it was stated that a record income of $520,000 had been raised during the year Investigation by the scientific advisory committee into the influence of viruses in the causation of cancer and a vast amount of work in the field of chemotherapy were proceeding New methods of attack were also being developed by application of the most recent nuclear physics to treatment A surgeon Sir Stanford Cade, in moving the adoption of the report, said that the best yardstick by which to measure progress was mortality. Of cancer in accessible sites and in some internal organs it could be said that there was considerable decrease in mortality. Although in some sites, notably in the lung, the curve was still relentlessly on the upgrade, the rate for the lip, tongue, jaw, skin, breast and uterus was falling. It was undesirable to talk about cure, but Professor Dodds had given us a new weapon. The synthetic ovarian hormone diethylstilbestrol and its derivatives were potent in the clinical control of cancer of the prostate and possibly of other sites.

PARIS

(From Our Regular Correspondent)

Dec. 31, 1946.

The Paris Conference of the United Nations Educational, Scientific and Cultural Organization

In 1921 on the proposal of Léon Bourgeois (France) the Society of Nations appointed a commission, of which Henri Bergson was president, to examine international intellectual cooperation. In Paris the International Institute of Intellectual Cooperation, with which forty national commissions and numerous committees of experts collaborated, was created. In 1942 in London the Allied ministers for education met periodically to discuss the cultural reconstruction of occupied and devastated Europe. Then in 1945 in San Francisco the creation of a special organization was completed. On Nov. 1, 1945 UNESCO was organized in London and to its program were added sciences and information of the masses; forty-four nations signed the UNESCO convention.

The Paris Conference took place from Nov. 19 to Dec. 10, 1946. The French government put at the disposal of UNESCO the Majestic Hotel, former head office of the Paris gestapo. Forty-eight national delegations were present. The chief of the United States delegation was William Benton, under state secretary to the foreign office, with four delegates, five deputy delegates and thirty-three counselors. Other countries were represented by similar delegations. Seven nations of the United Nations Organization which have not signed the UNESCO charter, Russia, the Ukraine, Bielo-Russia, Costa Rica, Ethiopia, Honduras and Paraguay, did not send delegations.

PROGRAM, AIM AND WORKING METHOD

The secretary to the executive committee of UNESCO, Dr. Huxley, author of the book "UNESCO, Its Purpose and Its Philosophy," has indicated in his report to the conference the two main aims of UNESCO: first to contribute to peace and then to work for the happiness of humanity regardless of races, sexes, languages and religions, against every racism theory, by conforming oneself to the principle of equality, to guarantee to everybody full and equal access to education and the mutual respect between men and nations. An important task is reconstruction in the sphere of culture and science. One problem of prime importance in the direction of liquidating inequality is the fight against illiteracy. During 1947 a conference will establish throughout the world the ten UNESCO centers. They will partake of the same roof as the regional United Nations organizations for health, civil aviation, food and agriculture.

SUBCOMMISSION FOR NATURAL SCIENCES

The program of this subcommission has been prepared under the leadership of Joseph Needham, assistant professor of biochemistry at the Cambridge University and foreign professor of physiology at Stanford University. This subsection has been in communication with eighty-four international scientific organizations.

NATURAL SCIENCES PROGRAM

This program covers a wide range of projects, some of which are to be put into operation forthwith and others only to be studied and reported on to the next general conference.

FIELD TEAMS FOR THE STUDY OF NUTRITION

The highest priority was given to the important plan of establishing field teams for the study of nutrition problems, one in India (where already a small institute for researches on food is located at Coonor; it will also deal with the role of fish as food, which nourishes 60,000,000 of Bengalese), one in Hylean Amazon, one in China and later, when conditions permit, one in Africa. The aim of the field teams is to investigate all aspects of food production and utilization, deficiency diseases and other problems with the ultimate object of raising the standard of living for large masses of people in those great regions of the world now suffering from malnutrition.

OTHER NATURAL SCIENCE ACTIVITIES

Four field science cooperation offices will be set up in China, India, the Middle East and Latin America, staffed with scientific men engaged on every type of liaison work with the scientists of the region.

Assistance will be given in the scientific rehabilitation of the war devastated countries. The restoration of scientific libraries throughout the world will be facilitated through photographic reproductions and microfilms.

Grants-in-aid will be given for scientific work of international importance, such as type culture and collections of bacteria, algae, fungi and genetic mutants.

Grants will be allotted selected scientific expeditions and to aid existing international laboratories, such as the Marine Biological Station at Naples and the research laboratory on the Jungfraujoch.

Essential research equipment and material exchanges will be disseminated, notably by operating a scientific apparatus information bureau and by taking measures to overcome difficulties arising out of currency restrictions. A group of experts has already prepared a list of scientific instruments which includes already 20,000 items. The cost of equipment of various standard laboratories in various fields has been calculated.

The possibilities will be explored of creating new international laboratories for astronomy, applied mathematics (computing machines, for instance, to organize an exact method for a demographic survey), tropical diseases, oceanography and the migration of birds. The compilation of a world register of scientific institutions and scientists will be begun.

A plan is being urged to assist scientists in crossing national frontiers with their documents and scientific instruments.

Moreover, it has been decided, in agreement with the International Council of Scientific Unions, to resume the publication of scientific periodicals interrupted on account of the war. On the proposal of the Economic and Social Council of the United Nations Organization, UNESCO is to prepare a report on the organization of an international observatory, of a meteorological station in the Southern Hemisphere and of an international laboratory for studies on tuberculosis and another for food.

RELATIONS WITH OTHER SCIENTIFIC ORGANIZATIONS

The collaboration with other scientific organizations is of prime importance in order to avoid work on parallel lines and also in consideration of the restricted budget of UNESCO. A convention between UNESCO and the International Council of Scientific Union has been prepared. It consists in reciprocal consultation and representation, exchange of information and work in common for definite purposes. As regards relations with the World Health Organization, UNESCO contemplates taking over the purely scientific part of this organization and negotiations are in progress. A budget of $6,000,000 has been fixed covering the activity of all sections.

STRUCTURE OF ORGANIZATION

Every nation which is a member deputes a delegation of five representatives to the conference, which takes place every year; the next one will be in Mexico City in 1947.

SPAIN

(From Our Regular Correspondent)

MADRID, Dec. 10, 1946.

Medical Schools and Other Scientific Departments and Hospitals

At present the medical schools are functioning normally, though they do not seem to hold the high scientific rank they attained in the years before the civil war. Results too are rather below the former standard, owing chiefly to the lack of sufficiently trained and experienced educators. The filling of posts made vacant by the death, exile or political disqualification of their previous holders is still provided for by the outworn system of competitive examinations, now complicated by the fact that the ideological tendencies of candidates are taken into account and by the inadequate constitution of the boards of examiners, whose members are often not sufficiently trained in the specialties in question to be qualified to judge. Too often also recourse has to be had to the younger generation of teachers just out of school themselves and not fitted for the task of making a judicious selection, having furthermore only just occupied their own chairs. Notwithstanding all this, the voids are being gradually filled. Yet it is sad to see that men like J. F. Tello, T. Hernando, M. Varela Radio, J. Casas, B. Landete, E. Trobo (to name only a few from the Madrid Faculty of Medicine) and others who in the last twenty years had contributed by their high reputation abroad to the prestige of the Spanish medical schools are still excluded from the universities, although they are not absolutely deprived of their other civic rights. In recent months the hopeful rumor has got about that some who are living in Spain are to be reinstated, and Professor Marañon's return to his old functions seems to constitute a happy omen.

The aforementioned drawbacks are not so apparent in the hospitals in Madrid which are not attached to the university. True some old professors have been deprived of their posts—like Professor Manuel Tapia, and Professor I. Sanchez Covisa, who died recently—and they have not been replaced by really satisfactory men. However, some other excellent and already famous masters have entered the service, among them Professor C. Jimenez Diaz, Professor E. Oliver Pascual, Dr. J. Lopez Ibor (who has taken the place of the distinguished exile Professor G. R. Lafora), Dr. Benzo and Dr. R. Garcia Tapia, and from nearly all of these we are warranted in expecting fruitful work even if anything changes the political situation. Nevertheless, it is painful to think how scarce is the scientific production of the National Hospital for Infectious Diseases (the former Hospital del Rey) which, before the civil war, under the direction of Professor M. Tapia, did such great honor to Spanish medicine by its publications.

The most notable event in the field of medicine in the year 1945 was the return to his chair of endocrinology in the Madrid Faculty of Medicine of Professor Gregorio Marañon, who went into exile in 1936 but returned to Spain in 1943, not, however, without having overcome some difficulties. During his stay abroad he was one of the most eminent exponent of Spanish medical culture in various countries of America and Europe, where he has left, as a trace of his passage, a series of important books. The returning to him of his department in the Madrid General Hospital was gratifying; but his reinstatement in his chair in the university has caused joy to all in that corporation who so greatly deplored the lack of good teachers as well as in all intellectual spheres in the country. His masterly lectures in the past academic year gave a real impulse to the university: the clinical and scientific sessions began to grow in interest as a sign of work resumed in relatively poor circumstances and needing a powerful stimulus. The attendance was extremely large and, among others present, were many old masters and some of the present professors: a good proof of fraternal feeling. A course of weekly lectures was given by the best Spanish and well known foreign professors, including the Portuguese Professors Reynaldo Dos Santos and J. Cerqueira Gomes; while among the Spaniards were Professors T. Hernando, G. Marañon, J. Morros Sarda, E. Oliver Pascual, M. Tapia, J. Sacristan, J. Germain, P. Barceló, A. Duque Sampayo, Rodriguez y Perez and F. Vega Diaz. But among all these lectures, two given by Professor M. Tapia, now director of an important tuberculosis institution in Portugal, stood out, being imbued with their author's great clinical and pathologic experience; particular interest attaches to one on bronchial tuberculosis.

One more fact which contributes to the value of the resumption of work in Professor Marañon's clinic is the appearance of the *Boletin del Instituto de Patologia Medica,* similar in its purpose and contents to the *Proceedings of the Staff Meetings of the Mayo Clinic,* in which the basic work of this center is reproduced as well as certain novelties in clinical endocrinology.

BUENOS AIRES

(From Our Regular Correspondent)

Nov. 5, 1946.

Congress on Surgery

The Seventeenth Argentinean Congress of Surgery was recently held in Buenos Aires under the presidency of Dr. Pablo Mirizzi. The following physicians were official speakers: Enrique Castaño and A. Trabucco, "Trauma of Kidney"; Carlos E. Ottolenghi, "Open Fractures"; J. M. Delrio, "Treatment of Burns"; Lelio Zeno, "Sequels of Burns"; H. Marino, J. Piñero Sorondo and Carlos Ottolenghi, "Organization of Surgical Centers in Hospitals"; Alejandro J. Pavlovsky, "Diagnosis of Acute Occlusion of Small Intestine"; Oscar Copello, "Pseudotumors of Bones"; Dr. Allende, "Conceptions on Preoperative and Postoperative Periods." Surgical sessions and the exhibition of surgical films were parts of the program. The attendance at the congress was large.

Congress on Obstetrics

The Sixth Congress of Obstetrics and Gynecology met in Buenos Aires under the presidency of Arturo J. Risolía. The following physicians were official speakers: Josué A. Berutti on the forceps, and Jorge de Rezende of Rio de Janeiro and Enrique Thwaites Lastra of Buenos Aires on neoplasms in relation to pregnancy. Dr. Fred L. Adair of Chicago, who was especially invited, showed a film on "Delivery" and later lectured on "Rupture of Uterus."

Speakers for the second official topic were the following: Drs. Pablo Borrás of Rosario and Guillermo di Paola of Buenos Aires discussed the morphologic, glandular and psychic changes of adolescence. Drs. Luis D. Bottaro of Montevideo and Enrique Bazterrica of Buenos Aires discussed "Repercussion of Gynecologic Disorders on Urinary Apparatus of Women."

Meeting of Gastroenterologists

A meeting of Latin-American gastroenterologists and nutritionists was held under the auspices of the Sociedad de Gastroenterología y Nutrición of Buenos Aires, of which Dr. Pedro A. Maissa is the head. The main official topic was "Sigmoid Diseases Excluding Cancer." Drs. Julio Carrere of Uruguay, Mariano Castex, Carlos Bonorino Udaondo and Ivan Goñi Moreno of Buenos Aires were official speakers. By unanimous votes of Argentinean, Brazilian, Mexican and Uruguayan delegates, it was resolved to establish an Inter-American Association of Gastroenterology. A committee was appointed with Drs. Julio Carrere, Benigno Varela Fuentes and Carlos Alberto Estapé of Uruguay and Carlos Bonorino Udaondo, Oscar Copello and Pedro A. Maissa of Buenos Aires. The association will have headquarters in Buenos Aires. Inter-American congresses and medical works on gastroenterology will be arranged in the future by the association.

Correspondence

PSYCHIATRIC CASUALTIES

To the Editor:—In a communication in the Nov. 9, 1946 issue of The Journal Dr. Koontz raised an issue of great importance to both medicine and society today in his discussion of the high incidence of psychiatric cases during the recent war. Such an incidence is not, of course, confined to members of the armed forces: it is rather exaggerated in this case owing to the additional stress of circumstances and brought into prominence by the careful attention it receives. But I would not hesitate to suggest that peacetime periods of stress, such as those of depression, result in an equally high incidence of psychiatric "casualties," which in this instance do not have the benefit of medical assistance or even of diagnosis.

That the increasing amount of maladjustment is more than a simple medical problem is implied in Dr. Koontz's second suggestion of its cause, "a change in our political philosophy," but I do not believe that this formulation is accurate enough to lead us to a successful solution. The phrase "political philosophy" is not defined by the correspondent, although he characterizes it as affecting the "patriotism and sense of duty of a great mass of our citizens." I would prefer to say that the change has been much broader, involving the attitudes of and to the whole society in which we live, and that the change in patriotism and sense of duty is only one aspect of the changing psychology of the period.

It has been well shown by sociologists, anthropologists and those psychiatrists who have used the social approach that any culture passes through an evolution of growth, maturity and decay. During the early expansionist period, creative activity of all kinds is high: material, artistic and spiritual developments are great and new areas of human skill and thought are explored. Later the dominant forms emerging out of the earlier activity become apparent as characteristic of the society. Finally, development slows, expression becomes stereotyped and tends toward the bizarre, and quantity and quality of all activity degenerates. During the first two periods the individual finds a place in society: he feels he owes it something and is willing to sacrifice himself for the good of society because it offers him something outside himself. Creative opportunity enables, in fact encourages, him to turn outward and lose himself. At such times the amount of maladjustment is low. During the later period of contraction the individual's opportunities become more limited and his frustration increases. He feels no larger purpose outside himself and that he has little reason to cooperate with others and consequently fails to achieve or maintain mental health. In short, the morale of society is low: there is not only little patriotism and little sense of duty but increased delinquency, divorce and general signs of maladjustment. Efforts to alleviate the situation in material terms, as by government relief during a depression, do have a bad effect on a citizenry that has been taught to believe, and in fact demonstrated to itself, that it can be self sufficient. But this is only a secondary effect on an already low morale. That it can be rapidly overcome given the right conditions is demonstrated by the remarkably high morale during the war of the British people, who suffered as much as any one by the dole.

In the periods of contraction, with their consequent ill effects on the mental health of the people, attempts are made to relieve this symptom of disorder in the social organism. Many theories and courses of action are suggested. Religious revivalists point to sin as the cause and salvation as the cure. Fascists and Nazis ascribe the symptoms to too much democracy and hail dictatorship and race superiority as solutions. (It is easy to see how the frustrations of people at this time can be played on by antiracial propaganda.) The psychiatrist is one who approaches the problem scientifically, but as long as he deals only with individuals he will see only symptoms and seek in vain, as does Dr. Koontz, for the underlying etiology. Some psychiatrists have suggested that the cause lies in faulty child upbringing and that the solution is proper psychologic education. But, though this takes us back one step in the chain, we are still dealing only with symptoms; and who is to educate the educators? It is my belief that the new "tactical alinement" of which Dr. Koontz speaks is for psychiatry to adopt a study of society itself and of the relation of the individual to society, taking all it can of the knowledge and methods of those sciences which have already entered the field. It must seek answers to the fundamental questions Why is society no longer expanding? What are the precise effects of the decay on the individuals comprising the society? and How do these effects develop from the primary cause? For this a study of other societies in different stages of development is essential. Psychiatry is not too young for the task—it is simply too naive.

F. W. Hanley, M.D., Ottawa, Canada.

AGAINST EPONYMS

To the Editor:—I should like to call attention to an article in the Dec. 28, 1946 issue of The Journal, page 1070, entitled "Guillain-Barré Syndrome Treated with Neostigmine."

Comparatively few readers would know what the Guillain-Barré syndrome was, although most of us would know virus encephalomyelitis. Many of us would not bother reading about the Guillain-Barré syndrome since it would be completely foreign to us, while we would be highly interested to know about neostigmine treatment of such a common condition as virus encephalomyelitis. Thus perhaps valuable information would be missed because of personal name reference.

How much more interesting would it be if it read "Virus Encephalomyelitis Treated with Neostigmine." If it is really necessary to cater to the name of the man or men who first described a certain disease for reasons of stimulating people's interest or for reasons of good will, their name might be put in parentheses after the descriptive name rather than the reverse. I believe, however, that most medical men should be big enough to give to the profession their description of a new entity without requiring that their names be repeated and advertised whenever the disease entity is mentioned.

William Wolf, M.D., New York.

REMOVAL OF ODOR FROM BOOKS

To the Editor:—In The Journal of Nov. 9, 1946, in Queries and Minor Notes, page 609, there appeared an inquiry from Don A. Duffie, M.D., of Central Lake, Mich., on getting rid of the smell of books.

While mold is frequently present and is popularly charged with causing the odor from books, especially when the relative humidity of the air is high, there are other factors which contribute to book deterioration and the accompanying odor. One potent cause is sulfur dioxide, which is a common ingredient of the atmosphere and is in high concentration over cities.

This menace has been controlled by recirculating the air of the library through activated carbon. This method not only reduces the sulfur dioxide content to a negligible quantity but at the same time removes any extraneous odors from the air. The system has been applied successfully to the Rare Books Rooms of the Widener Memorial Library at Harvard and of the Sterling Memorial Library at Yale and to the Archives Vault of the State Museum at Denver, Colo.

F. H. Munkelt, Vice President,
W. B. Connor Engineering Corp.,
New York 16.

MEDICAL JOURNALS NEEDED IN THE NETHERLANDS

To the Editor:—A friend of mine in the Netherlands to whom I have been sending various American magazines after I have read them asked me if I knew a doctor who would be willing to provide her son, a medical student, with old copies of THE JOURNAL. Instead, I sent a year's subscription to this young man, and I quote the letter of acknowledgment I have received from him:

> You cannot imagine how much I was surprised to hear from my mother that you intended to give me a year's subscription to THE JOURNAL. It is for a Dutch student in his third year a great sensation to get a journal which professors and doctors here try to get in vain. We have got a Dutch medical journal too but owing to the war it is not up to date and cannot be compared with the American ones. THE JOURNAL is even superior to the London *Lancet* and that's why so many medical people hanker after such an elaborate journal. I will of course share all the copies with my fellow students. After all these words I have forgotten to thank you but I think you will understand my gratitude.

Perhaps I should explain that because of the present currency controls in the Netherlands the Dutch cannot use their money to buy foreign exchange for anything but the vital necessities. Therefore many Dutch people who would be able and willing in normal times to pay for subscriptions to foreign publications cannot do so.

It occurs to me that many American doctors, if this was brought to their attention, would be more than happy to send subscriptions to doctors and students in the Netherlands. I am sure medical schools and medical associations in that country would be glad to furnish names or distribute the copies. Or some doctors might be willing to send their back files of THE JOURNAL for the war years.

The quoted letter makes it clear how gratefully your publication would be received and how generously it would be shared. As one who spent two of the war years in two European countries, I can testify to what a real privation it is to be denied access to current publications from abroad and how one longs for every contact with the outside world. I therefore hope that my fellow countrymen of the medical profession will find this suggestion good and respond to it.

MRS. C. A. TAYLOR.

NEUROLOGIC COMPLICATIONS OF SPINAL ANESTHESIA

To the Editor:—In connection with the paper of Drs. Nicholson and Eversole on "Neurologic Complications of Spinal Anesthesia" (THE JOURNAL, Nov. 23, 1946), the following case seen in an Army hospital in 1943 may be of interest:

A Negro aged 30 had undergone an appendectomy about three months prior to the time I saw him. The operation was performed under spinal anesthesia, and metycaine (dose unknown) was used. Because the anesthetic would not take, a second dose of the same drug was introduced into the spinal canal and the operation successfully completed. The postoperative course was complicated by a slowly improving cauda equina syndrome. There was a complete paralysis of the lower extremities for about three days; urinary difficulties were reduced to mere hesitancy by the time the patient came under my observation. Hyperreflexia and sensory changes also were present.

The interesting feature of this case was the presence of sexual impotence. The patient stated that he had noticed the absence of erections immediately after the operation. The patient attempted intercourse about a month after the operation but was unsuccessful. Two months later women were still "sore" at him because of his impotence, although occasionally he would be able to complete the act. A follow-up of this case was impossible because of the military situation.

A review of the literature available in 1943 was negative as far as the description of sexual impotence following spinal anesthesia was concerned. I do not know of any case with similar symptoms described in the literature since.

PERCY MASON, M.D., New York.

BLOOD GROUP TESTS OF THE NEWBORN

To the Editor:—In the December 7 issue of THE JOURNAL Dr. M. A. Hyman recommends blood group tests for identification of the newborn child. The suggestion is not practical, because it recommends testing for far too large a number of blood factors.

Testing serums for factor P are very rare, difficult to obtain and frequently not reliable. They are seldom used even by experts. Also very rare is testing serum for factor Hr. Testing serums for factors M and N are easily prepared, but tests for these factors are best carried out by expertly trained workers. Subgroups of A are frequently not clearly differentiated in the newborn. Subgroup A_2 may be mistaken for O and A_2B for B. Even experts recommend "in affiliation cases not to carry out the (grouping) tests until the child is at least one month of age" (Wiener, A. S.: Blood Groups and Transfusion, 1943, p. 386). Thus, it is likely that the tests for factors P and Hr and for subgroups A_1, A_2, A_1B, and A_2B would have to be excluded at time of birth in most instances.

However, with the reservations mentioned, Dr. Hyman's suggestion is worthy of consideration. Tests for the A, B, O and Rh factors would add to the reliability of identification of the newborn infant by footprints. The mother's blood factors should also be determined as part of the prenatal examination.

ISRAEL DAVIDSOHN, M.D., Chicago.

NUTRITION DURING PREGNANCY

To the Editor:—In reference to the note "Prevention of Congenital Malformation" (THE JOURNAL, November 16, p. 674), I should like to add that there is another factor which ought to be taken into consideration; it is the question of maternal nutrition during gestation. There was a paper written about three or four years ago on this subject by a group in Boston and their work seemed to indicate that this also plays a role. I remember that at the time the significance of the work was not appreciated and that many people concerned with this aspect of medicine remained uninformed.

H. G. KEITEL, Lieutenant, M. C., A. U. S.,
Station Hospital, Fort Hamilton, Brooklyn.

SUGGESTION FOR FIXING NASAL TUBE

To the Editor:—I am offering a suggestion for fastening the Levin nasal tube in place, which I consider simple and practical.

After the tube is passed the desired distance and wiped free of lubricant, a 2 foot length of 1 or 2 inch gauze roller bandage is placed parallel to the tube, with its midpoint just beneath the nostril. The bandage is fastened to this point on the tube by a few turns of ½ inch adhesive tape. The bandage is then knotted over the tape, and the free ends are brought across the face over the ears and tied in the suboccipital region, as in tying the strings of a surgical mask.

This method is comfortable and avoids slipping of adhesive tape which has been loosened by perspiration.

JEROME SCHROFF, M.D., Baton Rouge, La.

Medical Motion Pictures

FILM REVIEWS

A New Horizon. 16 mm. Black and white, sound, 750 feet (1 reel), showing time twenty-one minutes. *Produced in 1946 by RKO-Pathe, Inc.* Presented by and procurable from the National Foundation for Infantile Paralysis 120 Broadway, New York 5.

This is a dialogue propaganda film on physical medicine. The story opens with two interns arguing about the diagnosis of the condition of a patient whom they see at a distance. They consult an orthopedist, who says that the patient is his and gives a diagnosis of poliomyelitis. The orthopedist then turns the interns over to a specialist in physical medicine in the treatment of poliomyelitis and other diseases. Some of the initial dialogue between the specialist in physical medicine and the interns is good, but there are many weak points. After this initial discussion the physiatrist and the interns walk through a department of physical medicine and see various types of patients receiving different kinds of physical treatment. Discussion turns to a curative workshop, and there are flashbacks to show how simple equipment is employed to rehabilitate patients at this workshop. There is a final talk by the physiatrist in which he makes an emotional appeal to the interns to employ good physical treatment, and then the camera focuses on the Oath of Hippocrates as the film ends.

To the physician interested in physical medicine, this film is disappointing. In general the script is well conceived, but one regrets the numerous minor weaknesses which ruin it and defeat its purpose. Despite good camera technic and a good overall general plan, the physician-actors in this propaganda dialogue just do not speak the language of scientific physicians. The interns' naive and rather stupid argument concerning the diagnosis of the condition of a patient whom they have not even examined will immediately antagonize most physicians. This defeats the main purpose of the film, which is obviously to arouse the respect of members of the medical profession for this important field of medical practice. Also the main character, the physiatrist, is not well cast and does not give the proper impression of scientific ability, maturity and forcefulness. This film was obviously conceived in a laudable effort to tell physicians more about physical medicine, and it is to be regretted that so much fine effort has been completely spoiled by lack of appreciation of the average physician's reaction to a number of minor weaknesses. One has a distinct feeling of disappointment because this could have been such a good film but has turned out so poorly.

The film was shown to a group of physicians without comment, and all immediately expressed unfavorable reactions. Among the comments were "medically amateurish," "undignified," "unprofessional," "more like a soap opera than a scientific presentation," "too obviously propaganda" and "it antagonizes rather than wins the interest of the physician."

The film will harm, not help, the development of proper respect for physical medicine by physicians.

Anesthesia. 16 mm., Color, sound, 825 feet (1 reel), showing time twenty-three minutes. Produced in 1946 by Princeton Film Center, Princeton, N. J. Professional adviser, E. A. Rovenstine, M.D. Procurable on loan from Merck & Co., Inc., Rahway, N. J.

This is a report type film dealing particularly with Vinethene anesthesia rather than with the much broader subject suggested by the title. The photography is excellent. The pronunciation of Vinethene should be changed in the narration. The clear presentation of the chemical properties of Vinethene (divinyl ether) would be enhanced by the addition of a structural formula and a comparison of ethyl ether. The method of administration of Vinethene alone and in combination with ethyl ether or nitrous oxide-oxygen is demonstrated. Several dental extractions and brief otolaryngologic surgical operations are shown. The film would have greater teaching value if certain important points, such as indications and contraindications, signs and treatment of overdosage, were presented in a visual text rather than only mentioned in the narration. A more thorough demonstration and discussion of fewer operative procedures, including the necessity of preanesthetic examination of heart and lungs and urinalysis on every patient, the importance of maintaining a patent airway to prevent anoxia, a suction device at hand on all surgical operations in the mouth and upper air passages and examination of the circulatory, respiratory and eye activity during anesthesia, would make this a valuable teaching film for medical students, dentists, surgeons and anesthesiologists.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Medical Practice Acts: Revocation of Doctor's License for Commission of an Abortion.—The Board of Medical Examiners revoked the defendant's license to practice medicine on the ground that he had been guilty of performing an abortion, and the revocation was sustained by the trial court. Accordingly the defendant appealed to the district court of appeal, first district, division 1, California.

The defendant's first point, said the court, deserves scant attention. He argued that, because the accusation against him was made by an agent of the respondent medical board and said board heard the evidence and determined defendant to be guilty, the defendant was deprived of his valuable property right to practice medicine without due process of law. No authority is cited in support of this contention. Under our statutes, continued the court, the right to practice medicine is granted to all qualified persons by the respondent board and said board is likewise granted the right, and indeed charged with the duty, to hear and determine any accusations bearing on the qualifications of a licensee to continue the practice of medicine. If a physician whose license is ordered revoked by the board is not satisfied with the determination of the board, he may, as was done in the instant case, apply to the superior court for a review of the board's action, and he then may have a full and complete hearing in the superior court. Not only is he not deprived of a right of property without due process but he is given ample legal opportunity to protect that right.

Section 2377 of the Business and Professions Code, the section which the defendant was charged with violating, provides:

> The procuring or aiding or abetting or attempting or agreeing or offering to procure a criminal abortion constitutes unprofessional conduct within the meaning of this chapter.

A criminal abortion is defined by section 274 of the Penal Code as follows:

> Every person who provides, supplies or administers to any woman, or procures for any woman to take any medicine, drug or substance, or uses or employs any instrument or other means whatever, with intent thereby to procure the miscarriage of such woman, unless the same is necessary to preserve her life, is punishable by imprisonment in the state prison not less than two nor more than five years.

The defendant's principal contention was that the evidence was insufficient to sustain either the board's order or the judgment of the trial court. A detailed analysis of the evidence, said the court, is not necessary to demonstrate that the Board of Medical Examiners was justified in concluding that the defendant committed certain prohibited acts with intent to cause a miscarriage on the persons of Miss Ballard and Mrs. Palmer and that the superior court was justified in reaching the same conclusion on the same record. It is difficult to understand how any other conclusion could be reached. The evidence showed that the defendant knew that both women were pregnant when they visited him, and he admittedly performed the acts amounting to an abortion. The evidence also showed that both women were in normal health, except for being pregnant, that the performance of an abortion therefore was not necessary to save the life of either; also the defendant required each woman to sign a card which was later filled in to read that each had undergone an abortion prior to consulting the defendant. All essential elements of a criminal abortion were established, said the court, and the evidence abundantly sustains a violation of section 2377 of the Business and Professions Code. The proceeding here involved is an administrative, disciplinary proceeding and is not criminal in its nature nor is it to be judged by the legal standards applicable to criminal prosecutions. As stated in a prior case:

> Where, on the other hand, the legislature has created a professional board and has conferred upon it power to administer the provisions of a general regulatory plan governing the members of the profession, the overwhelming weight of authority has rejected any analogy which would require such a board to conduct its proceedings for the revocation of a license in accordance with theories developed in the field of criminal law. . . .

Finally the defendant argued that the evidence was insufficient because the 2 women involved were accomplices. The requirements of corroboration in a criminal case do not apply to administrative proceedings, said the court. This action not being criminal in its nature, it is apparent that the statutory mandate that a person may not be convicted on the uncorroborated testimony of an accomplice has no application here. We feel satisfied that any witness whose testimony as to competent facts was convincing to the board engaged in the hearing of the charge would be legally sufficient. We have already expressed the conclusion, the court said, that the testimony of persons who might be accomplices could be received and might be considered by the board trying the charge. Accordingly, the order of revocation entered by the Board of Medical Examiners and affirmed by the superior court was sustained.—*Murphy v. Board of Medical Examiners of California, 170 P. (2d) 510 (Calif., 1946).*

Abnormally Long Pregnancy Raises No Presumption of Infidelity.—The plaintiff's husband filed suit for divorce on the ground of adultery, the case being heard in the Supreme Court, special term, Queens County, New York.

The plaintiff and defendant were married on March 12, 1944. On April 24, 1944 the plaintiff, an officer in the merchant marine, left the country for duty in the Pacific, returning to the United States Jan. 4, 1945. On April 14, 1945 the defendant gave birth to a child which she claims is the child of the plaintiff. The plaintiff offered no evidence of any misconduct on the defendant's part but asked for a decree solely on the hypothesis that it is impossible for a period of 355 days to elapse between coition and parturition.

A gynecologist who taught at the Yale Medical School, called as an expert witness by the plaintiff, testified that the accepted period of gestation is 270 days, with the longest authenticated period being 320 days. He admitted that there was a nonauthenticated case of 369 days. A physician called by the defendant as an expert testified that the ordinary period of gestation is 280 days, or ten lunar months, but that there are instances of 328 days and 344 days.

The physician who attended the defendant during her pregnancy testified that the defendant came to her on Nov. 14, 1944, complaining of pain in the right side of the abdomen and said that she had previously had pain in the left side of the abdomen. The defendant informed the physician that her last menses was Oct. 4, 1944 and that the last time she had seen her husband was April 24, 1944. The physician advised her that the birth should take place about the end of January 1945. The defendant immediately wrote to her husband and informed his family as well as her own friends and family. On Feb. 5, 1945, when she examined the defendant, the physician said she found the head of the fetus engaged, a position of the head which generally occurs about a month prior to birth. In the light of this testimony, said the court, the birth should have occurred about March 5, 1945; which would have been 316 days from coition, a not improbable period of gestation. On Feb. 19, 1945, however, the physician again examined the defendant and, finding no sign of impending birth, recommended that the defendant go into a hospital. The defendant spent three days in a hospital, February 28, March 1 and March 2, during which time she received treatment to induce labor. These treatments were ineffectual, however, and the defendant returned to her home, finally giving birth to a 9 pound child on April 14, 1945. The physician stated that on every examination of the defendant the fetus was small.

It thus appears, said the court, that while the duration of pregnancy was 355 days, the head of the fetus was engaged for at least 68 days, which presents a question as to whether the last forty days were a part of the period of gestation proper or were due to difficulty in delivering the child.

In an English case decided in 1921, there was no evidence of misconduct on the part of the wife except the lapse of time between coition and the birth of the child, which was 331 days. Three leading medical authorities testified that such an interval could not be said to be impossible. Viscount Birkenhead in dismissing the petition said:

> In this case the only evidence of adultery is the admittedly abnormal length of pregnancy. No other fact or circumstance has been adduced which in the slightest degree casts any reflection upon the chastity or modesty of the respondent, who has on oath denied the alleged adultery. I can only find her guilty if I come to the conclusion that it is impossible, having regard to the present state of medical knowledge and belief, that the petitioner can be the father of the child. The expert evidence renders it manifest that there is no such impossibility. Under these circumstances I accept the evidence of the respondent and find that she had not committed adultery, and accordingly I dismiss the petition.

The New York court said that the presumption of legitimacy is one of the strongest and most persuasive known to the law. Even aside from this presumption, however, having regard to the evidence in this case and the present state of medical knowledge and belief, it cannot be said that it is impossible that the plaintiff is the father of this child. The expert evidence, plus the fact that the head of the fetus was engaged for 68 days when birth normally occurs within a month after such engagement, "renders it manifest that there is no such impossibility." The court accordingly rendered judgment in favor of the defendant and dismissed the complaint.—*Lockwood v. Lockwood, 62 N. Y. S. (2d) 910 (N. Y., 1946).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in The Journal, Jan. 25, page 267.

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Part III.* Durham, Oct. 21-23. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology: *Oral.* Los Angeles, April 11-12. Sec., Dr. P. M. Wood, 745 Fifth Ave., New York.

American Board of Dermatology and Syphilology: *Written.* Various centers, March 24. Final date for filing application is Feb. 17. *Oral.* New York City, April 25-27. Sec., Dr. George M. Lewis, 66 E. 66th St., New York 21.

American Board of Internal Medicine: *Written.* Chicago, March 17. *Oral.* Chicago, April 24-26. Final date for filing application is Feb. 15. Asst. Sec., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

American Board of Neurological Surgery. *Oral.* Examination to be given during the Summer. Applications for examination will be accepted until Feb. 15. Sec., Dr. P. C. Bucy, 912 S. Wood St., Chicago.

American Board of Obstetrics and Gynecology: *Part II.* Pittsburgh. June 1-7. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Ophthalmology: *Oral. All Groups. Parts I and II.* Chicago, October. Final date for filing application is March 1. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Me.

American Board of Otolaryngology: *Oral.* St. Louis, April 16-20. Chicago, Oct. 7-11. Sec., Dr. D. M. Lierle, University Hospitals, Iowa City, Ia.

American Board of Pathology: Philadelphia, June 3-4. Final date for filing application is April 15. Sec., Dr. Robert A. Moore, Euclid Ave. and Kings Highway, St. Louis 10.

American Board of Pediatrics: Effective May 1, application fee will be $125.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

147:237-432 (Oct.) 1946. Partial Index

Permeability of Blood Capillary Sprouts and Newly Formed Blood Capillaries as Compared to That of Older Blood Capillaries. R. G. Abell —p 237.
Nature of Intraperitoneal and Intrarectal Pressures. R F. Rushmer. —p. 242.
Placental Toxin· Inactivation and Tolerance During Pregnancy. C. L. Schneider.—p 255
Changes in Arterial and Venous Blood Pressure and Flow Distal to Cuff Inflated on Human Arm. R W Wilkins and S E Bradley —p. 260.
Studies of Right and Left Ventricular Activity During Hemorrhagic Hypotension and Shock D. F. Opdyke and C J. Wiggers —p 270.
General Tolerance and Cardiovascular Responses of Animals to Explosive Decompression W. V. Whitehorn, A Lein and A. Edelmann —p 289.
Assay of Nephrosclerosis Producing Anterior Pituitary Preparations Eleanor C. Hay and Paulette Seguin —p 299.
Movements of Body Water in Response to Acute Blood Loss. T. S. Danowski, J R Elkinton and A. W. Winkler.—p. 306.
Relation of Temperature and Thyroid to Mammalian Reproductive Physiology. R. Bogart and D. T. Mayer —p. 320
Hemodynamics in Pulmonary Irritant Poisoning H. M. Patt, J. M Tobias, M N. Swift, S Postel and R. W. Gerard —p 329
Sodium Chloride as Adjunct to Diet of Whole Wheat and Whole Milk. H L Campbell —p 340.
Formulation of Principal Factors Affecting Rate of Uptake of Carbon Monoxide by Man N. Pace, W V. Consolazio, W. A. White Jr. and A R Behnke —p 352
Permeability of Placenta of Guinea Pig to Inorganic Phosphate and Its Relation to Fetal Growth. W. S. Wilde, D B. Cowie and L. B Flexner —p 360
Decline in Rates of Sweating of Men Working in Severe Heat. S D Gerking and S Robinson —p 370.
Apparent Curare Effect of Substances That Decrease Acetylcholine Synthesis. Clara Torda and H G Wolff —p. 384
Sweat Gland Activity and Changing Patterns of Sweat Secretion on Skin Surface W C Randall —p 391.
Hyperchromic Anemia Produced by Choline or Acetylcholine and Induced Remission of Both by Folic Acid or Liver Injection. Probable Mechanism of Action of Liver and Folic Acid in Treatment of Anemia J E Davis—p 404

Annals of Internal Medicine, Lancaster, Pa.

25:585-772 (Oct) 1946

Schistosomiasis Japonica Its Clinical Development and Recognition E C Faust —p 585
Amebiasis of Liver Classification, Diagnosis and Treatment G Klatskin —p 601
*Some Common Conditions, Not Due to Primary Heart Disease, that May Be Associated with Changes in Electrocardiogram. W. Sensenbach —p 632.
Renal Changes in Secondary Shock P. A Herbut —p 648
Acute Mediastinal Emphysema B M Schwartz, G H McIlroy and H. A. Warren —p 663.
Studies on 2 Sporadic Cretinous Brothers with Goiter, Together with Some Remarks on Relation of Hyperplasia to Neoplasia J Lerman, H W. Jones and E. Calkins —p 677.
Inquiry into Incidence of Hyperhidrosis in Convalescent Trench Foot J. J. Silverman —p. 702.
*Toxicity of Mercurial Diuretics Observations on Eighteen Cases with Suggestions for Prevention of Toxic Reactions S Ben Asher.—p 711

Electrocardiographic Changes. — Coincidentally with the increased application of electrocardiography, there has developed a tendency toward misuse of this method, due to the fact that its limitations have not been recognized. It is of value in the recognition of the cardiac arrhythmias and in the detection of myocardial infarction. It may be useful in determining if and when the heart has become involved during certain systemic diseases and in determining whether or not a person has been taking certain drugs, notably digitalis but also various malarial drugs, epinephrine, ergotamine tartrate, atropine, emetine, tobacco smoke and so on The accepted standards of normality for the electrocardiogram are incorrect, since too many healthy young adults show changes which, according to these standards, are diagnostic of heart disease. Conditions not due to primary disease of the heart that may be associated with changes in the electrocardiogram similar to those caused by coronary sclerosis and myocardial disease include: acute infections, pericarditis, metabolic disorders, renal disease, acute manifestation of upper abdominal disease, pulmonary embolism and imbalance of the autonomic nervous system. Exercise may also cause changes in the electrocardiogram. The major cause for the more serious mistakes in interpretation is the widespread belief that changes in the QRST complex and especially the ST segments and T waves are specific for myocardial disease.

Toxicity of Mercurial Diuretics. — Ben-Asher reports reactions to mercurial diuretics in 18 cases, in 10 of which the reaction was delayed and was the result of dehydration This type of reaction was associated with a high environmental temperature. Nine of these patients recovered with the administration of salt and water. In 8 cases the reaction occurred immediately after the injection. An immediate reaction in a patient under dehydration therapy indicates a poor prognosis Reactions may be avoided by intermittent injections. Because excessive dehydration may follow diuresis and since chlorides may be lost through the sweat glands the mercurials should not be given during high environmental temperatures.

Archives of Ophthalmology, Chicago

36:531-660 (Nov.) 1946

Detachment of Retina. Pathologic and Therapeutic Considerations. H. Arruga.—p. 531.
Fluorescent Colors in Tangent Screen Examinations. J. B. Feldman and H. J. Abrahams.—p. 537.
Use of Berman Locator in Removal of Magnetic Intraocular Foreign Bodies. L. P. Guy.—p. 540
Vascular Basis of Allergy of Eye and Its Adnexa. W. F. Duggan —p. 551.
Experimental Studies on Blood Aqueous Barrier: I. New Electrophotometric Method of Measuring the Concentration of Fluorescein in Aqueous F W. Stocker.—p. 612.

Archives of Surgery, Chicago

53:489-602 (Nov.) 1946

*Surgical Treatment of Patent Ductus Arteriosus: Report of 5 Cases H H. Bradshaw, W. L Molineux and M. C. Bowman —p. 489.
Lymphogranulomatous Strictures of Rectum Résume of 476 Cases L. T. Wright, W. A. Freeman and J. V. Bolden —p 499.
Appendicitis. Review of 936 Cases at Cincinnati General Hospital S. Tashiro and M. M. Zinninger.—p. 545
Treatment of Poisoning with Rattlesnake Venom: Experiments with Negative Pressure, Tourniquet and Bulb Suction. C. H. Pope and L W. Peterson —p 564.
Comparative Efficacy of Blood from Normal and from Burned Donors in Experimental Burns. M D. McCarthy and W. M. Parkins —p 570
*Burn Shock Its Treatment with Continuous Hypodermoclysis of Isotonic Solution of Sodium Chloride into Burned Areas· Clinical Studies in 2 Cases J. K Berman, G. S. Pierce and M. M Best —p 577
Cysts of Duodenum R J Booher and G T. Pack —p 588.

Surgical Treatment of Patent Ductus Arteriosus.—Five patients whose ages varied between 18 and 30 years were operated on for patent ductus arteriosus The ductus of 2 patients was doubly ligated, of 2 patients it was severed between clamps and the ends oversewn, and of 1 patient it was plicated Bradshaw and his associates think that division of the patent ductus should be the procedure of choice when possible. One patient died Four had subacute bacterial endarteritis complicating their congenital heart disease. These 4 patients had preoperative embolic accidents. The mediastinal pleura of the last 3 patients was closed, since it was felt that the area was sterile as the result of the penicillin therapy. Penicillin has materially aided in reducing the mortality rate of patients with subacute bacterial endocarditis superimposed on a congenital patent ductus arteriosus

Treatment of Burn Shock with Hypodermoclysis of Isotonic Solution of Sodium Chloride.—Berman and his associates report observations on 2 patients treated with this method. One of these patients died and the other survived They stress that this treatment of burn shock is useful in neutralizing or diluting hypothetic toxins, as illustrated in the patient whose burn toxemia was adequately controlled. In the patient who died it was at least partially neutralized. The patient who died had an alkalosis which may have been due to an excess of sodium. A warning is sounded concerning excessive administration of sodium and fluid. Even though the fluid is given subcutaneously or by mouth, it is believed that in the late stages of burn toxemia slight underhydration is safer than overhydration, and acidosis is more easily controlled than alkalosis. The authors conclude that the use of isotonic solution of sodium chloride by continuous hypodermoclysis into the burned area is to be recommended in extensive burns for burn shock and toxemia. It is useful during the granulation stage of burn wounds to increase resistance to infection and to stimulate healthy granulation tissue..

Blood, New York

1:459-564 (Nov.) 1946

Preservation of Normal Human Plasma in Liquid State: V. Clinical, Chemical, and Physicochemical Studies During Three Years of Storage at Room Temperature. E. L. Lozner, Sonia Lemish, A. Sue Campbell and L. R. Newhouser.—p. 459.
Platelet Counts and Platelet Function. P. M. Aggeler, Joan Howard and S. P. Lucia, with technical assistance of Edith Mills.—p. 472.
*Pseudohemophilia: Case Study. W. Perkins.—p. 497.
Pseudohemophilia. S. Estren, L. Sanchez Médal and W. Dameshek.—p. 504.
Influence of Stilbamidine on Myeloma Cells. I. Snapper and B. Schneid.—p. 534.
Hematological Changes Following Administration of Large Doses of Quinacrine Hydrochloride. C. W. Mushett and H. Siegel.—p. 537.
Specificity of Isoagglutinin Response Following Injection of Group Substances into Group O Individuals. W. C. Boyd and F. C. Lowell.—p. 548.
Blood Groups, Subgroups and Rh Factor of Mapuche Indians of Province of Cautin, Chile. L. Sandoval S., C. Henckel and L. Givovich.—p. 555.

Storage of Human Plasma in the Liquid State.—Analysis of 3,384 questionnaires completed after administration of liquid plasma more than a year old indicates that the transfusion of such plasma is safe and beneficial up to at least three years of storage. The untoward reaction rate following these administrations was significantly less than that following a comparable series of 1,500 administrations of commercially prepared dried plasma. The chemical and physicochemical changes observed in plasma stored in the liquid state at room temperature are of no more clinical significance at the end of three years' storage than at the end of eighteen months, the present National Institute of Health expiration date. Because at the end of six months' storage liquid plasma is devoid of blood coagulation factors, complementary activity and probably other antibodies, it should not be administered to patients with either hemorrhagic diatheses or infections and who require these components specifically. Hence it should be used chiefly for its colloid content and should be subject to the same precautions regarding excessive dosage as is human serum albumin.

Pseudohemophilia.—A condition which is often hereditary and is characterized chiefly by a prolonged bleeding time in the presence of normal platelets is referred to as "pseudohemophilia" or "hereditary hemorrhagic thrombasthenia." Perkins presents the history of a patient with this condition, which was transmitted by and occurred only in the male line. The occurrence in the male offspring of the patient's father and of the latter's second wife irrefutably proves this point. The degree of prolongation of the bleeding time varied from day to day and was occasionally normal. Except for transient hypocalcemia with tetany, no defect in the blood elements or in clot formation was noted. There appears to be a failure of normal capillary constriction following trauma.

Bull. of the U. S. Army Med. Dept., Washington, D. C.

6:491-636 (Nov.) 1946

Clinical and Laboratory Observations on 256 Cases of Trichinosis. J. M. Oppenheim, C. B. Whims and A. W. Frisch.—p. 581.
General Hospital in Normandy Campaign. J. E. Dunphy and S. O. Hoerr.—p. 594.
Stress on Personnel Flying the "Hump." W. M. Jeffries.—p. 603.
Cercarial Antigen (S. Mansoni) Skin Test in Diagnosis and Management of Schistosomiasis Japonica. B. Katzin and H. Most.—p. 613.
Sarcoidosis: Report of 2 Cases. M. Lev and C. L. Hinkle.—p. 617.

Florida Medical Association Journal, Jacksonville

33:227-286 (Nov.) 1946

Significance of Soft Tissue Injuries. R. F. Stover.—p. 257.
Infantile Scurvy. A. W. White.—p. 260.
Maternal Mortality in Florida. Lucille J. Marsh.—p. 263.

Journal of Bone and Joint Surgery, Boston

28:659-944 (Oct.) 1946. Partial Index

*Management of Penetrating Wounds and Suppurative Arthritis of Knee Joint in Mediterranean Theater of Operations. O. P. Hampton Jr.—p. 659.
Skin Grafting in Treatment of Osteomyelitic War Wounds. R. P. Kelly.—p. 681.
*Restoration of Bone Strength with Reinforcement Bone Grafts. G. K. Carpenter, R. T. Rosenfeld and K. F. Mech.—p. 692.
Surgical Principles of Split Thickness Skin Grafting. A. L. Leveton.—p. 699.
Neurectomy to Produce Atrophy of Amputation Stump. A. O. Adams.—p. 716.
Multiple Innervation of Limb Muscles in Man. W. H. Hollinshead and J. E. Markee.—p. 721.
Active Splinting of Hand. S. Bunnell.—p. 732.
Operation for Nonunion of Fractures of Carpal Navicular. M. C. Cobey and R. K. White.—p. 757.
Conservative Treatment of Congenital Talipes Equinovarus. I. Blumenfeld, N. Kaplan and E. O. Hicks.—p. 765.
Treatment of Congenital Flat Foot. J. E. M. Thomson.—p. 787.
Internal Fixation of Trochanteric Fractures of Femur: Report of 103 Consecutive Cases. R. M. O'Brien, J. C. Shy and N. J. Bublis.—p. 791.
*Paget's Disease: Statistical Study of 82 Cases. F. W. Newman.—p. 798.
Posterior Approach to Superolateral Region of Tibia. E. B. Kaplan.—p. 805.
Surgical Procedure for Repair of Recurrent Dislocation of Shoulder Joint: Preliminary Report. E. H. Crosby.—p. 809.
Complete Dislocations of Acromioclavicular Joint: Nature of Traumatic Lesion and Effective Methods of Treatment, with Analysis of 41 Cases. M. R. Urist.—p. 813.
Panner's Metatarsal Disease: Condition of Aseptic Necrosis Simulating March Fracture. R. E. Van Demark and P. V. McCarthy.—p. 842.
Supracondyloid Process of Humerus. L. B. Barnard and S. M. McCoy.—p. 845.
Recurrent Dislocation of First Carpometacarpal Joint Repaired by Functional Tenodesis. O. C. Kestler.—p. 858.

Management of Penetrating Wounds of Knee Joint.—Hampton says that no sepsis of the knee joints was observed in patients treated with complete initial surgery, closure of the synovial membrane or capsule of the joint, and adequate immobilization. Suppurative arthritis with prolonged drainage and slow destruction of the articular surfaces was observed in several patients whose joints had moderate or even minimum intra-articular damage but in whom the excisional surgery had been poor and the joints had been left open for drainage. An aggressive surgical regimen was instituted in the 19 patients under close observation. Eight knee joints in which there had been only minimum exposure at the time of the initial operation were reopened. In 4, devitalized areas of articular cartilage were removed. After irrigation the joints were closed, penicillin was instilled and immobilization was provided. No suppurative arthritis followed. Six knee joints with suppurative arthritis, but without septic destruction of the joint, were opened widely. The joint was cleaned; blood clot and pus were removed by irrigation. The synovial membrane was sutured. Penicillin was instilled and immobilization was provided. Aspiration, irrigation and reinstillation of penicillin were performed at intervals of twenty-four or forty-eight hours for about a week. The sepsis was controlled. Subacute septic processes in 2 other knee joints also were treated surgically. Limb endangering sepsis in 3 knee joints was eradicated by resection of the joint. The authors stress that the initial surgical treatment should include arthrotomy, excision of the devitalized tissue, cleansing of the blood clot and débris from the joint, suture of the synovial membrane or capsule and immobilization of the limb. At reparative surgery, preferably from five to ten days after the intra-articular surgery, the skin should be sutured. In cases of suppurative arthritis the same surgical plan is indicated. Systemic penicillin supplemented by the local instillation of penicillin into the joint should be employed in patients with wounds and suppurative arthritis of the knee joint.

Reinforcement Bone Grafts.—According to Carpenter and his associates the condition called limited union is not to be confused with delayed union. Delayed union progresses to solid bony union in due time, and the end result is compatible with normal function. Limited union is a condition of solid bony union; but the end result is a shaft which is incapable of normal function, since it is weaker and usually smaller than normal The authors delay a bone graft operation until three months after complete wound healing in order to minimize the incidence of infection The extent of bone healing at this time will nearly always indicate whether the fracture will progress to a complete and sufficient union by conservative measures. The authors performed a total of 52 reinforcement bone grafts for limited unions The bones requiring operation were the femur, tibia, first metatarsal, humerus, ulna and radius. Tibial grafts with multiple chips and cancellous bone from the upper tibia were used in most cases. Iliac grafts may be used advantageously. As a general rule, screws are used to fix the graft and plaster casts for external fixation, except for the femur, which is almost always treated in suspension-traction

Paget's Disease.—Newman in reviewing the case records at the Hospital of the University of Pennsylvania for a fifteen year period found 82 cases of Paget's disease in a total of about 127,000 histories The disease shows about an equal distribution between the sexes. It occurs predominantly in late middle life. Only 29 patients entered hospitals because of pain in a part of the body where the bones were found to show pagetoid changes Two patients complained chiefly of deformity, and 8 others had complaints related to cranial nerves in areas found to have pagetoid changes. In over 50 per cent of the cases, Paget's disease was an incidental finding The pelvis was involved in 29 cases, the skull in 25, the spine in 16, the femur in 17, the tibia in 7, the humerus in 2 and the radius, fibula and metacarpals each in 1 case The complications of Paget's disease are cranial nerve pressure, fractures, urinary calculi and sarcomatous degeneration It is the complications of Paget's disease which usually cause the patient to seek medical care. Of the treatments directed against the symptoms of the disease as such the author mentions only roentgen therapy and magnesium carbonate

Journal of Immunology, Baltimore

54:213-324 (Nov) 1946

Immunochemistry of Toxins and Toxoids II Preparation and Immunologic Evaluation of Purified Tetanal Toxoid L. Pillemer, D B Grossberg and Ruth G Wittler—p. 213.

*Influenza Index on Periodic Determination of Average Antibody Titers of Population Samples B. S Schwartz, J. H. Milstone, M Bayliss and E Decoursey—p 225.

Reactivation of Overneutralized Mixtures of Influenza Virus and Antibody A. P. McKee and W. M. Hale—p 233

Antigenicity of Alkali Treated Bovine Serum Protein. L A. Kazal, R J DeFalco and L E Arnow.—p 245

Standardization of Cardiolipin Lecithin Cholesterol Antigen in Complement Fixation Test with Cerebrospinal Fluid. Elizabeth Maltaner and F Maltaner.—p 253.

Studies of Antipneumococcal Serum VI. Changes in Complement Fixing Activity of Rabbit Serums During Periods of Immunization, Rest and Reimmunization. C. E Rice—p. 261.

Id VII Complement Fixing Activity of Fractionated Rabbit Serum Christine E Rice and Gretchen R Sickles—p. 267.

Coliform Bacterium with Complete Antigens of Salmonella Newington E Seligmann and I Saphra—p 275.

*Attenuation of Virulence with Retention of Antigenicity of Mumps Virus After Passage in Embryonated Egg J. F. Enders, Jeanette H Levens, J. Stokes Jr. and others—p 283.

Alterations in Pathogenesis of Experimental Lymphocytic Choriomeningitis Caused by Prepassage of Virus Through Heterologous Host G Shwartzman—p 293.

Preparation and Evaluation of Irradiated Toxoid from Toxin of Shigella Dysenteriae Sara E. Branham and K Habel—p 305

Studies on Reversibility of Antigen Antibody Reaction II Disaggregation of Agglutinated Pneumococci Exposed to Homologous Polysaccharide Marion C Morris and Helen V. Karr—p 315

Influenza Index.—Schwartz and his associates propose a serologic index for the study of influenza, the use of a spectrophotometer for facilitating the estimation of hemagglutinin and antibody titers, and a simplified method of calculating hemagglutinin and antibody titers. They studied the antibody levels of the civilian and military population of Oahu following an epidemic of influenza B and during a period of mass vaccination carried on by the army. The index demonstrated the generally elevated level of influenzal antibody titer just after an epidemic, and the subsequent decline of that titer. The general antibody response to mass vaccination and the comparative antigenic effectiveness of the PR 8 and Lee components of the vaccine were demonstrated. The study also indicated an antigenic difference between the Lee strain of influenza B and a local strain of influenza B isolated during a recent epidemic.

Attenuation of Virulence with Retention of Antigenicity of Mumps Virus.—Enders and his co-workers found that after twenty-five serial passages in the embryonated egg the virus of mumps loses its capacity to induce typical experimental parotitis in the monkey when inoculated via Stensen's duct. Such attenuated virus immunizes the monkey against a subsequent inoculation of the agent in its virulent form The attenuated virus likewise induces the formation of complement fixing antibody and the factor which inhibits hemoagglutination There is evidence that the complement fixing antibody and the antihemoagglutinin are not identical. Mumps virus after twenty-five passages in the chick embryo appears to be no longer capable of inducing typical mumps in presumptively susceptible human beings when sprayed into the oral cavity. It may, however, irregularly lead to the formation of complement fixing antibody. The results of an experiment in 1 child suggest that the virus after a single egg passage may provide a more satisfactory immunizing agent.

Journal of Pharmacol. & Exper. Therap., Baltimore

88:195-322 (Nov.) 1946 Partial Index

Assay of Renotrophic Activity of Anterior Pituitary. Eleanor C. Hay—p 208.

Oxidation of Phenethylamine Derivatives by Amine Oxidase. L. O Randall—p 216.

Toxicity of Stabilizers for Concentrated Human Albumin Solutions I. Production of Cardiac Arrhythmias in Cats by Sodium Salts of Caprylic and Related Fatty Acids. V. E Hall and M. S. Waldman—p 221.

Effect of Di-Isopropyl Fluorophosphate on Normal Human Eyes R. O Scholz and L J. Wallen—p 238

Prophylactic Effect of Hexamethylenetetramine in Dogs Exposed to High Concentrations of Phosgene. L. Karel and R. E Weston—p. 254.

Comparative Study of Several Barbiturates with Observations on Irreversible Neurologic Disturbances S Krop and H. Gold—p 260.

Protective Effect of Adrenolytic Drugs Against Fatal Myocardial Epinephrine Concentrations. W Raab and R. J. Humphreys—p 268

Pharmacology and Chemistry of Substances with Cardiac Activity IV Effect of Methylaminoethanol, Dimethylaminoethanol and Related Substances on Isolated Mammalian Heart. O. Krayer, A. Farah and F. C Uhle—p. 277.

Role of Hepatic Detoxification in p Aminopropiophenone Induced Methemoglobinemia J. Tepperman and O. Bodansky—p 287.

*Synergism Between Barbiturates and Ethyl Alcohol. Helen Ramsey and H B Haag—p. 313.

Synergism Between Barbiturates and Alcohol.—Ramsey and Haag found that when sodium seconal was given orally to mice the lethal dose was considerably lowered when alcohol was given at the same time The anesthetic dose of sodium pentothal for dogs was also reduced by previous oral administration of 95 per cent alcohol Duration of anesthesia resulting from sodium pentothal injection was greatly increased in the presence of alcohol The onset of anesthesia from injection of sodium barbital appeared to be delayed by the presence of alcohol, but the duration of anesthesia resulting from the injection of sodium barbital was materially increased by the presence of alcohol The blood level of sodium barbital was not altered by the presence of alcohol. Picrotoxin was found less efficient as an analeptic in rabbits given sodium pentobarbital plus alcohol than in those given sodium pentobarbital alone.

Kentucky Medical Journal, Bowling Green

44:327-354 (Oct) 1946

President's Address. "He Looked in the Liver." E W. Jackson—p 330.

Agranulocytosis Following Thiouracil Therapy: Case Report. J. R Hendon—p. 336.

Endometriosis. I. Abell Jr—p 339.

Occupational Skin Diseases in Steel Industry. W. H. Rice—p. 342

Streptomycin in Hemophilus Influenzae Meningitis J. W. Bruce, W. W. Nicholson, G. E Prince and M. Z. Kaplan—p. 345

Tropical Skin Diseases with Practical Reference to Civilian Application P. Mapother.—p 348.

44:355-386 (Nov.) 1946

"More Stately Mansions." S. A Overstreet—p. 357.

Civilian Application of Wartime Surgical Advances S H. Flowers—p 363.

Transylvania Medical Library. C. A Vance—p 365

New England Journal of Medicine, Boston

235:669-698 (Nov. 7) 1946

*Endometriosis: 200 Cases Considered from Viewpoint of Practitioner. J. Fallon, J. T. Brosnan and W. G. Moran.—p. 669.
Bright's Disease: Clinical Manifestations in Relation to Etiology and Prognosis. R. D. Pruitt.—p. 674.
Hepatic Complications of Amebiasis. H. Warshawsky, D. E. Nolan and W. Abramson.—p. 678.
*Friedländer Bacillus Meningitis Treated with Streptomycin. S. Tartakoff, B. Grynbaum and P. M. LeCompte.—p. 681.
Otolaryngology. C. G. Flake.—p. 684.
Colloid Carcinoma of Gallbladder, with Widespread Metastases.—p. 691.
Fibrous Dysplasia of Rib.—p. 693.

Endometriosis.—Fallon and his associates state that the diagnosis of endometriosis is oftener missed than made. They report 200 cases of external endometriosis, of which only 6 had entered the clinic with a correct diagnosis. During a period in which 107 cases of microscopically verified endometriosis were observed, only 78 cases of appendicitis were encountered in female patients; that is, endometriosis is more frequent than appendicitis. Endometriosis is a new growth of menstruating endometrium that, invading and sometimes metastasizing, tends to spread through the pelvis, causing chemical peritonitis, dense adhesions, sterility, destruction of ovaries and stricture of the pelvic intestine. The course, which is reversed by ovarian deactivation, may be arrested by excision of the lesions. To arrest without castration necessitates diagnosis before the lesions have become unresectable. The basic syndrome of endometriosis is cumulatively increasing pain at the time of the period occurring after about five years of menstruation without pregnancy. The prophylaxis seems to be early marriage and a child every few years.

Streptomycin in Meningitis Due to Friedländer's Bacillus.—Tartakoff and his associates report that a man from whom a meningioma was removed from the right hemisphere in the frontal area was diagnosed a week later as having meningitis, and Friedländer's bacillus type B was demonstrated in cultures of the blood and the spinal fluid. In spite of continued intramuscular and intrathecal penicillin, supplemented by sulfadiazine, the patient's condition became worse and although the spinal fluid showed no organisms it became increasingly gelatinous. Intrasternal administration of streptomycin was begun, but the man died three days later. It is significant that after the administration of streptomycin the spinal fluid became less viscid and that at necropsy study of the meninges and of the surface of the brain disclosed evidence of a nearly healed meningitis. Whether this would have been found if only the use of penicillin had been continued cannot be answered. Death was due to pulmonary embolism incident to a thrombophlebitis in the lower extremities.

North Carolina Medical Journal, Winston-Salem

7:585-632 (Nov.) 1946

Clinical Features of Psychoneuroses in World War II Veterans. M. H. Greenhill.—p. 585.
Use of Intravenous Iodine in Preparing the Patient with Toxic Diffuse Goiter for Operation. R. B. McKnight.—p. 590.
False Positive Serologic Tests for Syphilis. P. G. Reque.—p. 594.
Abdominal Cesarean Section in Asheville. C. N. Burton.—p. 596.
Diagnosis and Early Management of Inhaled and Ingested Foreign Bodies. G. B. Ferguson.—p. 598.
*Syncope as a Diagnostic Problem. E. W. Brian.—p. 603.
Clinical Importance of Rh Blood Type. J. B. Sidbury.—p. 606.
Spontaneous Mediastinal Emphysema: Case Report. R. M. Wheeler and W. M. Johnson.—p. 609.

Syncope as a Diagnostic Problem.—For purposes of differential diagnosis Brian divides the mechanisms producing syncope into four fairly well defined groups: cardiovascular, endocrine, neurogenic and psychogenic. Unconsciousness resulting from cardiovascular disorders is, as a rule, due to a sudden transitory diminution or cessation of cerebral blood flow. Metabolic disturbances may result in sudden loss of consciousness by producing hypoglycemia or lowering of the blood pressure, or both. Psychogenic and neurogenic fainting results from psychoneurotic and neurologic disturbances respectively. The latter is due to suddenly changing intracranial pressure and an associated variation in the cerebral arterial circulation.

Phillippine Medical Association Journal, Manila

22:223-286 (June) 1946

*Blood Bilirubin Determinations as Aid in Differentiations Between Peptic Ulcer and Portal Cirrhosis in Gastric Hemorrhage. R. J. Navarro, P. Ignacio and J. A. Silva.—p. 223.
Incidence of Cardiac Arrhythmias. J. M. Barcelona.—p. 233.
Digenia Simplex as Substitute in Treatment of Ascariasis. H. Lara, T. M. Gan, M. Y. Matias and A. C. Reyes.—p. 239.
Hyperalimentation Treatment of Peptic Ulcer with Amino Acids (Protein Hydrolysate) and Dextri-Maltose. C. Tui, A. M. Wright, J. H. Mulholland and others.—p. 243.
Disturbances of Associated or Conjugate Movements of Eye. G. de Ocampo.—p. 259.
Evaluation of Diets Served to Woman Students of University of Philippines. P. I. de Jesus, P. H. and S. G. Jao.—p. 263.
Treatment of Pneumonia in Children: (Report of 414 Cases in 1945). F. del Mundo.—p. 269.

Blood Bilirubin in Differentiation of Peptic Ulcer and Portal Cirrhosis.—Seven cases of massive gastric hemorrhage resulting in profuse hematemesis form the basis of this report by Navarro and his associates. Four of these patients had peptic ulcer and the other 3 had portal cirrhosis. The patients with peptic ulcer showed practically no bilirubin in the blood, while those with portal cirrhosis showed significant amounts of bilirubin. When clinical, laboratory or x-ray findings are not sufficiently distinct in cases of massive gastric hemorrhage, the bilirubin content of the blood may help in the differentiation of these two conditions.

Rhode Island Medical Journal, Providence

29:725-808 (Oct.) 1946

Background and Highlights of Rhode Island Hospital Unit in China-Burma-India Theater of War. I. A. Beck.—p. 739.
Overseas Experiences with Medical Service of 48th Evacuation Hospital. F. B. Cutts.—p. 740.
Overseas Experiences with Surgical Service of 48th Evacuation Hospital. J. M. Beardsley.—p. 744.
Experiences with Sympathectomy. J. P. Eddy.—p. 747.
Prolonged Endotracheal Oxygen: Case Report. O. F. Smith and R. E. Douglas.—p. 754.
Importance of X-Ray Department. E. W. Benjamin.—p. 763.

29:809-892 (Nov.) 1946

Management of the Convulsive Child. C. Bradley.—p. 823.
Neuropsychiatric Disorders, Office and Hospital Treatment. H. E. Kiene.—p. 829.
Present Problems and Procedures in Neuropsychiatric Outpatient Service. D. G. Wright.—p. 838.

Southern Surgeon, Atlanta, Ga.

12:269-328 (Nov.) 1946

*Carcinoma of Colon: Analysis of 113 Cases. A. Ochsner and M. O. Hines.—p. 269.
Practical Aspects of Rh Factor. J. T. Funk.—p. 289.
Differential Diagnosis of Intervertebral Cartilage Ruptures and Intraspinal Tumors within Lumbar Sacral Canal. E. F. Fincher.—p. 292.
Treatment of Acute Hematogenous Osteomyelitis. T. H. Blake.—p. 305.
Cholelithiasis: Modern Principles of Therapy. J. O. Morgan.—p. 309.
Charles Jefferson Miller—His Teaching in Therapy of Puerperal Sepsis. C. G. Collins.—p. 318.

Carcinoma of the Colon.—Ochsner and Hines review observations in 113 cases of carcinoma of the colon in 45 of which there was evidence of extension. The resectability of lesions in the right colon and those of the rectosigmoid were approximately the same, 81.8 and 84.3 per cent respectively. Lesions of the left colon, exclusive of the rectosigmoid and rectum, had a much lower incidence of resectability (65 per cent). The authors stress that the curative treatment of malignant lesions of the colon consists in wide removal of the involved portion of the bowel and the possible sites of metastasis. Although reestablishment of the continuity of the bowel in low-lying lesions has become quite popular, the authors believe that in any lesions except the extremely small ones in which there can be no extension distally abdominoperineal resection is the operation of choice and that as long as attempts are made to preserve the sphincter the recurrence rate and death rate from carcinoma will continue to be high.

Virginia Medical Monthly, Richmond

73:439-487 (Oct.) 1946

Plan for Improving Hospital Treatment of Psychiatric Patients. P. G. Hamlin.—p. 441.
Consideration of Urologic Care of Paraplegics. H. S. Talbot.—p. 449.
Cataract Surgery—Recent Developments. E. G. Gill.—p. 456.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

30:645-708 (Nov.) 1946. **Partial Index**

Some Historical Notes on Spectacles and on Beryllus. G. T. Doesschate.—p. 660.
Plastic Restoration ot Upper Lid and Socket. J. Luc.—p. 665.
Surgical Anatomy of Facial Nerve with Reference to Technic of Orbicularis Block (Palpebral Akinesia). M. Klein.—p. 668.
Certain Operations on Superior Oblique. J. Foster.—p. 676.
Inflammatory Jugular Phlebostenosis as Cause of Glaucoma Exogenicum. O. Meyer.—p. 682.
Ocular Lesions in Internees at Civilian Internment Camp at Hong Kong. H. Talbot.—p. 688.
Bilateral Partial Coloboma of Optic Nerve. J. A. Magnus.—p. 692.
*Deposition of Mercury in Eye. I. Abramowicz.—p. 696.

Deposition of Mercury in the Eye.—Abramowicz reports the experience of a woman aged 57 who requested the removal of dark pigmentation of the eyelids of both eyes. At the age of 16 she had had "blepharitis" and from that time on, in fear of a relapse, she continued to employ a remedy nearly every night. Now she was asking for the removal of the pigmentation which appeared about ten years ago and gives her much trouble because of resemblance to an exaggerated makeup. Examination revealed deposition of mercury in the eyelids, the bulbar conjunctiva, the region of Descemet's membrane and the anterior lens capsule.

British Medical Journal, London

2:681-722 (Nov. 9) 1946

*Tetraethyl Lead Poisoning. D. A. K. Cassells and E. C. Dodds.—p. 681.
*Postpenicillin Jaundice. R. R. Hughes.—p. 685.
Pyogenic Osteomyelitis of Spine. P. Martin.—p. 688.
*Treatment of Osteoarthritis by Lactic Acid Injection: Series of 26 Consecutive Cases in General Practice. R. Mawson.—p. 691.
Disappearance of Secondary Sarcomatous Deposits in Lungs After Stilbestrol Therapy. J. G. Roberts.—p. 693.

Tetraethyl Lead Poisoning.—Tetraethyl lead is the active ingredient of ethyl fluid, an anti-knock compound. Cassells and Dodds are concerned with the hazard involved in the cleaning of storage tanks which have contained leaded gasoline. After the cessation of hostilities a number of tanks which had been constructed for war purposes were no longer required. The regulations governing the cleaning procedure were overlooked or disobeyed in some instances, with the result that 25 cases of poisoning occurred, 2 of which were fatal. The earliest symptoms were disturbance of sleep and symptoms referable to the alimentary tract, such as lack of appetite, nausea, vomiting and diarrhea. Subjective nervous symptoms were irritability, restlessness, nervousness and anxiety. Pallor was not a feature, nor did punctate basophilia appear. If death does not occur, recovery is usually complete. All that is necessary in the milder cases is removal from exposure, light exercise in the open air, a normal diet with plenty of fluids, and the relief of sleeplessness by a suitable sedative. The treatment of the severe case calls for strict nursing supervision in view of the impulsive suicidal tendencies and the need for adequate fluid intake and sedation.

Jaundice After Penicillin Treatment.—Hughes found that of 124 patients with hepatitis treated in a military hospital in India 36 had had penicillin treatment. He thinks that this condition is transmitted from patient to patient by means of contaminated syringes. Experiments are described which show that a single intramuscular injection of 1 cc. of fluid may lead to contamination of the syringe used. The mechanism by which this contamination occurs is discussed.

Lactic Acid Injection in Osteoarthritis.—Stimulated by the work of Waugh on intra-articular injection of lactic acid with procaine into the hip, Mawson recently gave his treatment to 26 patients. From 15 to 20 cc. of a stable solution of 0.2 per cent lactic acid with procaine having a hydrogen ion concentration of 5.2 is injected into and around the hip joint on each occasion. A similar amount may be injected into the knee joint, but the wrist joint will only take amounts varying from 2 to 5 cc. After the injection the patient has to put the joint through all its movements. Two days of bed rest is prescribed. A second injection is given after seven days. Subsequent injections up to six are given if needed. All the 6 wage earners were able to return to work. Of the remaining 20, who were mostly housewives, 18 experienced considerable relief.

Lancet, London

2:663-702 (Nov. 9) 1946

Chilblains in Servicewomen. Albertine L. Winner and E. S. Cooper-Willis.—p. 663.
*Traumatic Pulmonary Edema Treated with Concentrated Plasma. G. Cleland.—p. 667.
Acute Phosgene Poisoning: Effects of Plasma Replacement: Experiments with Dogs and Goats. F. C. Courtice and G. L. Foss.—p. 670.
*Salt Deficiency in Sprue. D. A. K. Black.—p. 671.
Myocardial Fibrosis Following Arsenical Therapy: Report of Case. J. R. Edge.—p. 675.

Concentrated Plasma in Traumatic Pulmonary Edema.—According to Cleland pulmonary edema due to trauma is observed in burns due to underground explosions in mines, in gasoline explosions, in accidental inhalation of noxious gases in industry and in accidental overtransfusion. On the basis of illustrative cases he shows that intravenous concentrated plasma has seemed to be a valuable addition in the treatment of pulmonary edema due to trauma. There has been no tendency for the pulmonary edema to recur after this treatment. Apart from the risk of reactions to the plasma, the method is dangerous only if applied without preliminary venesection in cases of pulmonary edema due to overtransfusion.

Salt Deficiency in Sprue.—The 10 patients investigated by Black were selected from several hundred with sprue. The basis of selection was low blood pressure with asthenia, and signs of peripheral circulatory failure. The patients had low serum sodium and serum chloride levels and in some cases a plasma volume which was low in relation to body weight. When the patient was put on a high intake of salt, sodium and chloride were both retained, and the serum sodium and serum chloride rose to normal levels; the blood pressure rose and clinical signs of dehydration disappeared, though the abnormal loss of fat in the stools was not affected. Loss of electrolyte in copious watery stools is thought to be the main cause of the salt deficiency, but diminished intake of salt in anorexic patients is also a factor. The results reported do not suggest adrenal insufficiency. Treatment by increasing the salt intake to 15 Gm. a day corrects the dehydration in a few days.

Medical Journal of Australia, Sydney

2:469-504 (Oct. 5) 1946

Juvenile Rheumatism: Survey from Children's Hospital, Melbourne, with Addendum on Follow-Up System of Almoners of Hospital. G. E. M. Scott.—p. 469.
Fibrositis and Common Pains of Daily Practice. M. Kelly.—p. 480.
Lumbago. J. H. Young.—p. 485.

2:505-540 (Oct. 12) 1946

Disorders of Micturition. H. H. Schlink.—p. 512.
Disorders of Micturition in the Female. A. B. Walker-Smith.—p. 516.
*Toxic Goiter in the Middle Aged and Elderly. R. Whishaw.—p. 519.
Renal Glomerular Lesions in Eclamptic Toxemia. A. J. Canny.—p. 521.

Toxic Goiter in the Middle Aged and Elderly.—Thyrotoxicosis is a relatively common disease in the middle aged and elderly and may be present without a visible goiter or eye signs, and tachycardia may be minimal. Nearly all patients lose weight and are a little tremulous and weak. They tend to have high pulse pressures and hypertension and are usually breathless. The importance of early diagnosis and treatment is stressed, because degenerative cardiovascular changes tend to be accelerated by the condition.

Practitioner, London

157:333-412 (Nov.) 1946

Pneumonia. J. G. Scadding.—p. 333.
Influenza. J. N. Cruickshank.—p. 341.
Sore Throats and Tonsillitis. T. B. Layton.—p. 349.
Chilblains. J. E. M. Wigley.—p. 353.
Winter Ailments of the Old. H. Barber.—p. 357.
Winter Ailments in Infancy. C. McNeil.—p. 362.
Low Back Pain and Sciatica. A. S. Blundell Bankart.—p. 367.
Anesthetics in Obstetric Practice. A. D. Marston.—p. 372.
Acne Vulgaris and Its Treatment. G. B. Mitchell-Heggs.—p. 379.
Geriatrics: Medical, Social and Economic Problem. Marjory W. Warren.—p. 384.
Vitamin K in General Practice. D. M. Evans.—p. 391.

Proceedings of Royal Society of Medicine, London

39:763-848 (Oct.) 1946. **Partial Index**

Peculiarities in Pathology of Cancer of Anorectal Region. C. E. Dukes. —p. 763.
Surgical Complications of Amebic Dysentery. K. L. James.—p. 766.
Depersonalization Syndrome. H. J. Shorvon.—p. 779.
Penicillin Concentration in Blood and Milk of Bovines. G. Slavin. —p. 793.
*Outbreak of Industrial Fluorosis in Cattle. H. H. Green.—p. 795.
Leishmaniasis in Greece. B. Malamos.—p. 799.
Evidence for Vascular Mechanism in Ménière's Syndrome. M. Atkinson.—p. 807.
Ménière's Disease—Critical Review. A. J. Wright.—p. 809.
Report on 110 Cases of Acute Infection of Ear Treated with Penicillin. C. P. Wilson.—p. 812.
Application of Electromyography to Affections of Facial and Intrinsic Laryngeal Muscles. B. Feinstein.—p. 817.
Recent Developments in Manufacture, Fitting and Prescription of Contact Lenses of Regular Shape. F. Ridley.—p. 842.

Industrial Fluorosis.—Green says that, during the calcining of ironstone, smoke drifts on to neighboring farms, and on the nearest of these an obscure disease of cattle was reported. Samples of urine established a diagnosis by revealing 26 to 69 parts per million of fluorine. Samples of water from the affected farm showed only 0.5 part per million of fluorine, but grass samples within a few hundred yards of the burning mounds showed over 2,000 parts per million on the dry matter. The urine of the human family on the farm showed 1.3 to 4.2 parts per million of fluorine, thus averaging less than one-tenth that of the cattle urines but nevertheless being above normal and far above the value in the drinking water. Surface contamination of green vegetables is suggested as the source.

Transactions Royal Soc. Trop. Med. and Hyg., London

40:103-204 (Oct.) 1946

Effect of Antimalarial Drugs on Plasmodium Falciparum (New Guinea Strains) Developing in Vitro. R. H. Black.—p. 163.
Concerning Exoerythrocytic Forms and Evidence for Their Existence in Human Malaria. D. G. Davey.—p. 171.
Growth of Protozoa in Tissue Culture: II. Plasmodium Relictum, Exoerythrocytic Forms. F. Hawking.—p. 183.
Latency and Long-Term Relapses in Benign Tertian Malaria. P. G. Shute.—p. 189.

Paris Médical

2:401-412 (Sept. 14) 1946

*Aminothiazole (2921 RP) in Treatment of Toxic Diffuse Goiter. M. Perrault.—p. 401.
Prophylaxis of Acute Poliomyelitis. J. Pignot.—p. 410.

Treatment of Toxic Diffuse Goiter.—Perrault administered the French synthetic antithyroid agent aminothiazole (abadol) to 129 patients with toxic diffuse goiter, 0.4 Gm. being given in equally divided tablets of 0.1 Gm. four times daily. There were a few untoward reactions within the first two weeks of treatment in 15 cases (11.6 per cent), drug fever in 7, erythema in 3, urticaria in 1, nausea in 2 and backache with oliguria in 2. Simultaneous administration of amidonicotinic acid and occasionally of sodium hyposulfite or magnesia will prevent these untoward reactions. Aminothiazole is the treatment of choice in thyrotoxic cases of medium severity; it is indispensable in the preoperative treatment in severe cases, and it may be of the same value as iodine therapy in the mild cases.

Presse Médicale, Paris

54:569-580 (Sept. 7) 1946

Differentiation of Spontaneous Vasomotor Syndromes in Upper Extremity; Syndrome of Insufficiency of Vasoconstrictors; Syndrome of Standing Position; Syndrome of Dorsal Decubitus. R. Leriche. —p. 569.
*Electrocardiography in Malignant Diphtheria: Clinical and Prognostic Study. P. Giraud, A. Jouve, J. Senez and A. Heurtematte.—p. 570.
Cholinesterase and Pseudocholinesterase: Difficulty of Interpretation of Results of Serum Cholinesterase Studies in Pathology. D. Vincent. —p. 571.
Cavity of Apex of Lower Lobe: Clinical and Roentgenologic Features and Collapse Therapy. Y. Hebraud.—p. 573.

Electrocardiography in Malignant Diphtheria.—Giraud and his associates studied the electrocardiographic alterations in 33 patients with malignant diphtheria. Sinus tachycardia occurred frequently at the onset of the disease. In 12 cases auriculoventricular dissociation was observed from the fourth to the twelfth day of the disease, and a rapid ventricular rhythm with more than sixty and up to eighty and one hundred contractions per minute was observed in 11 of these cases. Paroxysmal ventricular tachycardia characterized the terminal period of the disease. Interauricular dissociation was observed in 2 cases with one series of positive P waves after a normal PR interval and with a second series of negative P waves maintaining a regular rhythm. In the great majority of the cases the alterations in the electrocardiogram occurred from the fifth to the twelfth day, but in some toxic cases death occurred in the absence of decisive alterations. A latent period precedes the appearance of definite anomalies, but in even less fulminating cases death may occur in the stage of branch block with only minor alterations in the electrocardiogram. Serial electrocardiographic studies should be made daily in the course of malignant diphtheria because of the changeable and transitory character of the graphic alterations.

Semaine des Hôpitaux de Paris

22:1607-1642 (Sept. 14) 1946

*Coagulation Power of Plasma and of Serum in Hemophiliac. P. Chevallier, M. Guillot, A. Fiehrer and C. Pasquier.—p. 1607.
Immediate and Late Results from Treatment of Early Syphilis with Bismuth Exclusively (Statistics of Fournier's Polyclinic). F. Coste and J. Nehlil.—p. 1610.
Puncture Associated with Injection of Thorotrast and Complete Removal in Treatment of Multilocular Cerebral Abscess. J. LeBeau and G. Guiot.—p. 1611.
Iron in Blood of Patients with Icterus and Anemia. P. Rambert, A. Morel, J. Boissier and R. Negri.—p. 1617.

Coagulating Property of Blood of a Hemophiliac.—Chevallier and his co-workers determined the coagulating property of the plasma and the serum of a hemophiliac in the presence of an excess of calcium and in a medium deficient in calcium. Complete absence of the coagulating property of the plasma and the serum of the hemophiliac was noted in a medium deficient in calcium. In the presence of an excess of calcium there was an initial absence of coagulating effect of the plasma and the serum of the hemophiliac for about thirty minutes. This was followed by a slow increase in coagulation. The coagulating property of the plasma and serum of the hemophiliac is considerably less than that of a normal person. There is a considerable delay in the appearance of the soluble thromboplastin in the extravasated plasma of a hemophiliac and an absence of free thrombin. Ultramicroscopic and photographic studies of the coagulum of the hemophiliac showed that its structure differs from that of a normal person. The specific structure of hemophilic fibrinous coagulum is closely related to the absence of free thrombin, which is absorbed by the hemophilic fibrin. The serum of a hemophiliac is rich only in free active prothrombin and its coagulating power in the presence of calcium appears almost equal to that of the normal serum. In vitro studies of the plasma of the hemophiliac showed that occasionally the clot undergoes considerable retraction and that most frequently the clot retraction is superior to that of the normal plasma.

Schweizerische medizinische Wochenschrift, Basel

76:815-838 (Sept. 7) 1946. **Partial Index**

Miliary Pneumonia of an Unusually Severe Course (Miliary Virus Pneumonias). W. Löffler and S. Moeschlin.—p. 815.
*Action Mechanism of Epinephrine. H. Staub.—p. 818.
Urethane in Leukemia. M. Kartagener.—p. 821.
Diuretic Action of 2,4-Diaminotriazine in Human Subjects: Preliminary Report. H. Ludwig.—p. 822.
Diuresis and Diuretics. O. Spühler.—p. 824.

Action Mechanism of Epinephrine.—Staub made determinations of the histamine content of the blood of human subjects following the intravenous administration of from 0.1 to 0.2 mg. of epinephrine, that is, of doses used therapeutically. It was found that the increase in histamine already begins during the injection of epinephrine, reaches its maximum at the end of the injection and rapidly decreases to normal values. Simultaneous determination of blood pressure, pulse frequency and leukocyte number reveals a time relation between decrease in blood pressure and maximum histaminemia. The 2 persons who had the highest increase in plasma histamine had also the most severe subjective disturbances, such as palpitation, anxiety and a feeling of weakness, so that these may be ascribed to the action of histamine. The author considers it probable that epinephrine vasoconstriction leads to reactive histamine discharge into the periphery and thus counteracts toxic epinephrine effects. He thinks that manifestations of collapse following conduction and infiltration anesthesia may be due to the effect of histamine. Undesirable side effects of epinephrine during local anesthesia might be counteracted by antihistamine substances.

76:841-982 (Sept. 21) 1946. **Partial Index**

Acoustic Trauma: Its Origin and Prevention. L. Ruedi and W. Furrer.—p. 843.
High Altitude in Treatment of Tuberculosis. J. E. Wolf.—p. 870.
Amputations. G. Perkins.—p. 874.
Twenty Years of Research in Typhus Fever. H. Mooser.—p. 877.
*Nutrition in Switzerland During War. A. Fleisch.—p. 889.
Experimental Diabetes Mellitus. F. G. Young.—p. 894.
Normal and Defective Fat Absorption in Man. A. C. Frazer.—p. 903.
Immediate and Late Results of Carotid Ligation in Intracranial Aneurysms. H. Krayenbühl.—p. 908.

Nutrition in Switzerland During the War.—Observations made on the 4 million inhabitants of Switzerland during the six war years show, says Fleisch, that the large amounts of calories, proteins and fat formerly considered as the optimum and which were eaten in such countries as the United States, England and Switzerland are not necessary. They probably do not represent the optimum for health. Whereas the League of Nations designates 2,400 calories as the standard for an adult not engaged in manual labor, Swiss observations indicate that 2,160 calories is sufficient. The standard of 1 Gm. of protein and 1 Gm. of fat per kilogram of weight seems adequate. A part of the meat and eggs eaten before the war and a large part of the cooking fats, sugar, white bread and macaroni can be replaced with good effects on the health by potatoes, vegetables, fruit and dark bread. From 75 to 90 per cent of calories are lost for human consumption if wheat is used to feed fowl and corn or barley as fodder for meat producing animals.

Giornale di Medicina, Palermo

3:95-138 (March-April) 1946. **Partial Index**

*Large Embolism in Bacterial Endocarditis in Course of Penicillin Therapy. G. Fradà.—p. 95.

Large Embolism in Penicillin Therapy in Bacterial Endocarditis.—Fradà directs attention to the frequency of embolism of the large blood vessels occurring in the course of penicillin therapy in acute and subacute bacterial endocarditis. Embolism of the large blood vessels took place in 4 of his 8 patients with acute or subacute bacterial endocarditis in the course of penicillin therapy. It occurred on the second or third day of the treatment. Embolism of the abdominal aorta took place in 1 case, in the femoral artery in 2 cases and in the axillary artery in 1 case. The author believes that penicillin increases coagulability of the blood and diminishes the resistance of the pathologic segments of the endocardium with consequent formation of thrombi. Liberal administration of papaverine and vitamin PP was without effect in the author's 3 cases.

Wiener klinische Wochenschrift, Vienna

58:221-236 (May 3) 1946

More Recent Views on Concussion Syndrome. K. Nowotny.—p. 221.
Limits Between Home and Hospital Deliveries. T. Antoine.—p. 223.
Morphologic Observations after Endolumbar Injection of Sulfapyridine and Sulfathiazole. W. Zischka.—p. 225.
*Cancer of Apex of Lung and Tumor of Superior Pulmonary Sulcus (Pancoast Tumor). O. Wichtl.—p. 228.

Apical Lung Cancer and Tumor of Superior Pulmonary Sulcus.—Among the necropsy reports of 10,209 patients who had been admitted to the Emperor Francis-Joseph Hospital in Vienna during the decade of 1933 to 1942, Wichtl found 302 reports of bronchial cancer, 43 with peripheral localization. Twelve of the latter group were to be considered as tumors of the apex of the lung, and only 2 of these were "Pancoast tumors." Microscopic studies suggest that the occurrence of cancer may be favored by tuberculous changes, which are frequently observed at this site, while Pancoast's concept that the tumor may arise from some embryonal rest is repudiated. The involvement of the superior pulmonary sulcus is explained by the restricted space within the thoracic cupola.

Acta Medica Orientalia, Jerusalem

5:249-284 (Aug.) 1946

Psychologic Methods of Obtaining Medical Information. F. Deutsch.—p. 249.
Penicillin Therapy of Early Syphilis. F. Stern.—p. 273.
Treatment of Recurrent Shoulder Dislocation with Autohemo-Injections. N. Kook.—p. 277.
*Mumps with Edema of Anterior Wall of Whole Body. K. Chrysanthis.—p. 279.
Klippel-Feil Malformation Associated with Syringomyelia. S. Sametnik.—p. 280.

Edema of Anterior Part of Body in Mumps.—Chrysanthis observed a girl aged 2 years and 3 months in whom infectious parotitis was associated with swelling of the sublingual glands and complicated by an edema of the anterior wall of the whole body from the upper part of the chest to the hypogastric region. The edema diminished gradually from the fourth day on and disappeared on the eighth day.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

90:1063-1102 (Aug. 31) 1946

Treatment of Varicose Crural Ulcer. J. S. van Coevorden.—p. 1067.
Penicillin in Treatment of Gonococcic Infections. M. K. Polano and W. G. van Den Upwich.—p. 1070.
*Unusual Case of Mycosis Fungoides. A. Lommen.—p. 1073.
Combined Degeneration of Posterior and Lateral Columns in Hypochromic Anemia with Gastric Achylia. A. Verjaal.—p. 1076.

Mycosis Fungoides.—Lommen reports the history of a woman with mycosis fungoides who has been free from relapse for over twenty-two years. The author feels justified in reporting this case since he was unable to find in the literature of the last twenty years any other report indicating such a prolonged cure in mycosis fungoides. This result was obtained with prolonged roentgen therapy.

Acta Dermato-Venereologica, Stockholm

26:489-580 (May) 1946

*Congenital Familial Anhidrosis and Neurolabyrinthitis. H. F. Helweg-Larsen and K. Ludvigsen.—p. 489.
Isolation of Atypical Strains of Neisseria Catarrhalis from the Genitourinary Tract. S. D. Henriksen.—p. 506.
Cheilitis Caused by Lipstick: Positive Cutaneous Reactions in 5 Persons Sensitive to Cosmetic Dyes. T. Putkonen.—p. 515.
Phthirus Pubis in Capillitium, Cilia and Supercilia. B. Heilesen and I. Lindgren.—p. 533.
Cutaneous Tests for Reiter's Disease: Preliminary Report. A. Storm-Mathisen.—p. 547.
Use of Irrigation Methods for Determination of Recovery from Gonorrhea. R. Pâtiälä.—p. 557.
Follow-Up of Children Suffering from Herpetiform Dermatitis. P. Søbye.—p. 561.

Congenital Familial Anhidrosis and Neurolabyrinthitis.—Helweg-Larsen and Ludvigsen describe a Swedish family in which 14 members were suffering from congenital anhidrosis (intensified hypohidrosis). Diminished sweat secretion was noticed in the affected members of the family from the age of 1 year. Instead of sweat drops, granular or ring-formed salt formation appeared on the skin, being most conspicuous on the ridge of the nose, on the upper part of the neck and in the axillas. Subjectively the patients felt uncomfortable in the heat, and in summer they had to quit work on account of a sensation of heat, oppressive headache, dyspnea and palpitation. Biopsy of the right forearm showed absence of sweat glands or excretory ducts of sweat glands. On exposure to a temperature of 127.4 F. (53 C.) for fifty minutes large and very scattered sweat points appeared, most of them localized in the axilla and in the pectoral region; these spots gradually presented a ringlike appearance. Biopsy of the skin revealed a single, definitely hypertrophic sweat gland with high columnar epithelium corresponding to one of the annular sweat marks in the axillary fold. The patients did not present any dental anomalies, defective development of hair, ozena or cranial deformities. Neurolabyrinthitis occurred in these patients between the ages of 35 and 45 years. Because of the ectodermal origin of the labyrinth, the possibility of a common disposition to the labyrinthitis and anhidrosis is to be considered. In contrast to hypotrichotic anhidrosis, the anhidrosis in the authors' cases was transmitted by simple dominant inheritance. An autosomal morbid factor different from that for hypotrophic anhidrosis is suggested which may have a pleiotropic effect on the development of the sweat glands and labyrinths.

Book Notices

A Bibliography of Infantile Paralysis 1789-1944, with Selected Abstracts and Annotations. Edited by Morris Fishbein, M.D., Editor, Journal of the American Medical Association. Compiled by Ludvig Hektoen, M.D., Chief Editor, Archives of Pathology, and Ella M. Salmonsen, Medical Reference Librarian, John Crerar Library, Chicago. Prepared under direction of The National Foundation for Infantile Paralysis, Inc. Fabrikoid. Price, $15. Pp. 672. Philadelphia, London & Montreal: J. B. Lippincott Company, 1946.

Beginning with Underwood's clinical description of infantile paralysis in 1789, this book records the growth of our knowledge of the disease in all its aspects—clinical, pathologic, epidemiologic, microbic and therapeutic—year by year to the end of 1944. It would be a mistake, however, to infer from this statement that infantile paralysis did not exist before Underwood's time, as references are listed to writings dealing with evidence that cases occurred even away back in ancient times. One interesting omission deserves mention, namely the description by Charles Bell in 1836 of an epidemic fever with paralysis in children on the island of St. Helena. This appears to be the earliest outbreak of infantile paralysis as now known. The use of the bibliography is facilitated by a comprehensive subject index of the articles and other writings by number. Extensive use of the book confirms the statement in the preface that this arrangement is the most convenient of the methods used in large bibliographies. The subject index takes up about one sixth of the volume. There is a separate index by numbers of authors. In all the bibliography lists 8,320 items, but many items refer to more than one article. As a rule little or no attention has been given to textbooks, medical systems, encyclopedias and routine official publications. The style is consistently that of the *Quarterly Cumulative Index Medicus* but without inclusive pagination. The annotations and abstracts are in general clear, concise and factual. The work of the publisher has been very well done. The items are well spaced on the pages, and the print is easily read. The steady growth of the scientific and practical concern with infantile paralysis is well shown by the fact that according to the number of items the first half of the bibliography covers the years 1789 to 1927. Unfortunately the medical literature of the war years outside of America and Great Britain has not been freely accessible, but this defect as well as omissions and mistakes are to be made good in supplementary publications. The bibliography will lighten greatly the search in the literature on infantile paralysis.

Fundamental Patterns of Maladjustment: The Dynamics of Their Origin. A Statistical Analysis Based upon Five Hundred Case Records of Children Examined at the Michigan Child Guidance Institute. By Lester Eugene Hewitt, Lt. U. S. Army, and Richard L. Jenkins, M.D., Associate Professor of Psychiatry, College of Medicine, University of Illinois, Chicago. Cloth. Pp. 110. Springfield, Illinois: State of Illinois, 1946.

This report is based on the hypothesis that "children who differ from each other in expressing fundamentally different patterns of behavior maladjustment (which, for them, however, are rational patterns of adjustment to the situations which they have experienced) must have experienced fundamentally different patterns of environmental circumstances."

After a brief but illuminating review of previous studies in the field, the authors outline their methods of classifying their data in preparation for statistical treatment—largely by tetrachoric correlation without the calculation of probable errors. Three behavior syndromes were initially postulated and then in general confirmed by the analysis as follows: "(1) assaultive tendencies, temper displays, bullying vengefulness, defiance of authority, etc. (designated as the unsocialized aggressive behavior syndrome); (2) gang activities, cooperative stealing, aggressive stealing, staying out late nights, truancy from school, etc. (socialized delinquency syndrome); (3) sensitiveness, seclusiveness, shyness, cowardness, jealousy, etc. (overinhibited syndrome)." The first of these patterns was found to be most closely correlated with "parental rejection," the second with early "negligence and exposure," the third with family repression and physical deficiency (table XLI, p. 68). Under therapy, the nature of which is not specified, "the unsocialized delinquent showed the least tendency to change. The socialized delinquent showed either improved adjustment or intensification of the problem. The tendency to improvement in school adjustment was greater than that in the home or community adjustment. The best results were obtained with the overinhibited children with improvement the rule" (p. 78).

A psychiatric interpretation of these findings is given in the quasi-freudian terms of intrapersonality conflicts among id, ego and super ego; however, it is recognized that while neutral, permissive psychoanalytic treatment may help the overinhibited child, kindly but firm disciplinary measures are necessary for the unsocialized delinquent, and broadened social contacts are needed by the budding little gangster. Despite the fact that the language of this monograph is so generalized that explicit conclusions are not clearly stated even in the final summary, the publication will prove of interest to sociologists, psychiatrists and other workers in the field of mental hygiene.

Cardiovascular Disease in General Practice. By Terence East, M.A., D.M., F.R.C.P., Physician-in-Charge of Cardiological Department, King's College Hospital, London. Second edition. Cloth. Price, 12s. 6d. Pp. 198, with 40 illustrations. H. K. Lewis & Co., Ltd., 136 Gower St., London W C. 1, 1946.

Most American physicians are advocates of brevity in medical writing, provided comprehensiveness is not sacrificed to brevity. Dr. East has attempted this almost impossible task and in less than 200 pages of text has undertaken to cover the field of cardiovascular diseases. The author presents his book to the general practitioner of medicine with the statement that it is important that he understand diseases of the heart. While no one would dispute this statement, it is obviously impossible to cover adequately a field as extensive as the one under discussion in such an abbreviated manner.

The general practitioner, as far as medical authors are concerned, has more or less been the "forgotten man." It is therefore important that his refresher education be based on solid principles and not on the superficial handling of important phases of disease. Modern medical teaching, both undergraduate and graduate, is committed to the proper teaching of pathologic physiology. This is particularly true in dealing with diseases of the heart and circulation, where the whole mode of treatment and management depends on a clear understanding and correct interpretation of the abnormal physiologic disturbances which prevail in a given patient. Owing to the abridgment of Dr. East's textbook, this important phase of the subject has not received proper consideration and emphasis. The present day status of medicine no longer permits treatment to be based on subjective phenomena alone.

Many subjects in the book are treated with such brevity as to be unenlightening and certainly cannot offer constructive assistance to the physician whose knowledge of the subject is limited. For example, the problem of congenital anomalies of the heart is covered in seven pages. Similar criticisms are applicable regarding other disease entities.

Modern accessory methods of diagnosis are literally ignored. One and a half pages are devoted to electrocardiography and roentgenography. Does this imply that the diagnostic information furnished by these methods of examination should be withheld from the general practitioner of medicine? This is quite contrary to the American philosophy of medical education. No short cut exists for the acquisition of medical knowledge. There is no doubt that the author's experience and knowledge would permit him to produce a truly helpful and comprehensive work which would completely fulfil his intentions.

Maternity Homes for Unmarried Mothers: A Community Service. By Maud Morlock and Hilary Campbell. United States Department of Labor, Children's Bureau, Publication No. 309. Paper. Price, 20 cents. Pp. 94. Supt. of Doc., Government Printing Office, Washington, D. C., 1946.

This publication of the United States Children's Bureau traces historically the efforts that have been made in the United States to provide maternity homes for unmarried mothers, and it reviews the changes that have occurred in attitudes toward this problem. The first institutions that could be considered maternity homes for unmarried mothers were founded in the middle of the nineteenth century under religious auspices or motivations. At the present time there are approximately two hundred such homes in this country. The problem is reflected by the fact that over 80,000 live births out of wedlock are reported each year for the United States. The second part of this pamphlet sets forth the point of view of the Children's Bureau as to the manner in which the maternity home can best meet the needs of these unmarried mothers and their infants, and the suggestions offered are intended primarily for those who operate such homes and for the case work agencies with which they cooperate. The pamphlet covers in detail case work service to the mothers and their babies, through either a case worker attached to the staff of the home or from a social work agency, and also discusses group activities, health and medical services and the organization of the home.

Currents in Biochemical Research. Edited by David E. Green. Thirty-One Essays Charting the Present Course of Biochemical Research and Considering the Intimate Relationship of Biochemistry to Medicine, Agriculture and Social Problems. Cloth. Price $5. Pp. 486, with illustrations. Interscience Publishers, Inc., 215 4th Ave., New York 3, 1946.

Biochemistry, in common with practically all other sciences, has advanced so rapidly in recent years that no individual may hope to become an expert in more than a small corner of this vast field. And since each branch of a science tends to develop its own terminology, the scientist away from his own specialized field becomes a layman distinguishable from other laymen only by his understanding of general scientific principles and methods. For this reason, books which attempt to give a comprehensive view of a science by stripping away the barriers of technical nomenclature are valuable not only to workers in that particular science but also to students of all science and especially to students of related sciences. Thus, this book, edited by Green, will be found interesting and useful not only by biochemists but also by physicians and medical scientists interested in obtaining a broad view of the entire field of biochemistry. For here in accurate but not too technical terms about thirty distinguished research workers in biochemistry have described the important developments in their own specialized fields and indicated the trends of future developments in those fields. There are thirty-one chapters dealing with such topics as genes, viruses, vitamins, hormones, enzymes, photosynthesis, nutrition, metabolism and immunochemistry. The result is a readable and stimulating volume from which the student will gain a broader insight not only into biochemistry itself but also into the intimate relationships between biochemistry and agriculture, biology and medicine. Although each chapter contains references for more specialized reading, the value of the book as a reference work would have been enhanced by the inclusion of an index.

Tuberculosis in the West Indies: Report on Sociological and Clinical Survey [1943, 1944]. By W. Santon Gilmour, M.B., Cloth. Pp. 221, with illustrations. National Association for the Prevention of Tuberculosis, Tavistock House N., Tavistock Square, London W. C. 1, [n. d.].

This bound report is based on an investigation (1943-1944) of tuberculosis in certain of the West Indian colonies. The project was supported by the British National Association for the Prevention of Tuberculosis, under whose auspices similar investigations had previously been made in Cyprus and Burma.

Twelve photographs are included, which portray housing and other conditions on these islands. In Trinidad and Tobago tuberculin surveys revealed that 44.3 per cent and 22.2 per cent of the urban and rural school children respectively reacted to tuberculin. In some towns as high as 100 per cent of adults were infected, with a lower percentage in the rural communities. Among children x-ray inspection of the chest revealed evidence of calcification in 20 per cent. However, the author does not state whether an attempt was made to determine how much of this was due to tuberculosis. The tuberculosis mortality rate decreased from 275 per hundred thousand in 1896 to 100 in 1943. Not enough beds are available to isolate contagious cases. Therefore ambulatory artificial pneumothorax is recommended whenever it is indicated.

In a remote rural area in the Barbados 50 per cent of adults reacted to tuberculin, in an area nearer the town 80 per cent, and in the urban area 100 per cent. The mortality rate was 127 in the urban and 31 per hundred thousand in the rural area.

In Granada, one of the Windward Islands, about 20 per cent of the urban and 12 per cent of the rural children reacted to tuberculin. The mortality rate was 79 per hundred thousand. On St. Lucia over 60 per cent of the urban and nearly 45 per cent of the rural children reacted to tuberculin. The mortality rate was 96 per hundred thousand. On the Leeward Islands the percentage of children reacting to tuberculin ranged from about 7 to 33. The highest mortality rate, over 250 per hundred thousand, in the West Indian colonies was found in the Bahamas. This is 500 per cent higher than in the United States and 400 per cent higher than in the British Isles.

Throughout the West Indian colonies the author found a low incidence of extrathoracic clinical tuberculosis. Generally speaking, tuberculosis has not been a serious problem among the cattle. However, in Antigua of the Leeward Islands the tuberculosis rate is high among the oxen but low among the dairy cows. The author has strongly recommended such procedures as testing young children with tuberculin in seeking the sources of their infections. He recommends the greater use of all diagnostic facilities, isolation of contagious cases, ambulatory artificial pneumothorax and other forms of collapse therapy.

This sociological and clinical survey provides a fine view of the problem in the West Indian colonies, and the recommendations which Dr. Gilmoure has made are excellent for its solution. The British National Association for the Prevention of Tuberculosis has contributed a splendid service by making this monograph possible and in planning for further similar projects.

The Technical Minutiæ of Extended Myomectomy and Ovarian Cystectomy. By Victor Bonney, M.S., M.D., B.Sc., Consulting Gynæcological and Obstetric Surgeon to the Middlesex Hospital, London. Cloth. Price $6.50. Pp. 282, with 242 original drawings by the author. Paul B. Hoeber, Inc., 49 E. 33d St., New York 16; 90 Great Russell St., London, W. C. 1, 1946

This book is by one of the leading British gynecologists and is his justification for the operation of myomectomy. He reports some 632 myomectomies with a 1.1 per cent maternal mortality. He speaks of removing as many as 225 myomas from one uterus and of removing as much as 21 pounds of tumor from 1 patient and still leaving the uterus in each instance. Slightly more than half of the patients were followed up; in 2.3 per cent fibroids recurred; in approximately 2 per cent the menorrhagia recurred. Of about half of the patients followed up pregnancy occurred in 38 per cent, or a total of 52 patients became pregnant. In America multiple myomectomy in general was given up several decades ago because of the initial high mortality and especially the late mortality due to intestinal obstruction. Bonney describes 301 cases in which he was able to peel off enough ovarian tissue from large ovarian tumors, thus preventing castration. Ninety patients had a follow-up, and of 48 patients in whom conception was possible 16 became pregnant. It is not stated how many of the myomectomies and cystectomies were definitely indicated in women who were anxious to have children. The drawings with their extensive legends make up the greater part of the book. It belongs only in the libraries of medical schools.

The Etiology of Deaf-Mutism with Special Reference to Heredity. By Harald Lindenov. Translated from Danish by Axel Andersen. Paper. Pp. 268, with illustrations. Einar Munksgaard, Norregade 6, København, K, 1945

This monograph by Lindenov represents a study of 480 deaf-mutes among thirty-two families living on the Danish islands of Seeland, Lolland and Falster. On the basis of his study the author concludes that sporadic deaf-mutism has a strong hereditary determination and that the inheritance tends to follow a simple autosomal recessive mode. This is in general agreement with the conclusions of previous investigators. The author also concludes that so-called acquired deaf-mutism may in many instances occur only when a hereditary predisposition exists. His evidence for this interpretation, though very suggestive, is not conclusive. To a geneticist the analysis of the available data does not seem complete. However, all in all, the study is an excellent one. It represents the type of genetic investigation that is needed with respect to all those human characteristics which are believed to have some hereditary basis but for which few data are available. It may be appropriate in this connection to point out that studies of the type exemplified by Dr. Lindenov's monograph are few and far between in the United States. Opportunities, however, abound everywhere.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

TREATMENT OF ACUTE CORONARY OCCLUSION

To the Editor:—What is the present treatment of acute coronary artery occlusion? Has the use of papaverine been discarded? Is Dicumarol being used in coronary thrombosis? Is aminophylline of much value?

M.D., California.

Answer.—There is as yet no newly introduced therapy for acute coronary occlusion that has made much difference to the course of the disease despite the occasional enthusiasm for one new measure or another. The therapy that is most favorably regarded by the majority of clinical observers consists in the treatment of the acute attack and in the following convalescent care.

Pain itself, which is almost invariably the important initial symptom of acute coronary occlusion, is best controlled by morphine sulfate, which may be given intravenously for more rapid action. The necessary dosage of morphine varies from ⅙ to ½ grain (0.01 to 0.03 Gm.) or more (in divided doses). It is unwise to give more morphine than is absolutely necessary, because of the disagreeable nausea and vomiting that may be induced thereby and because of the depression of respiration and gastrointestinal function. The administration of atropine may lessen somewhat the vagal overstimulation by the morphine. Aminophylline, papaverine and oxygen have sometimes seemed helpful, particularly oxygen if it is readily available, but usually these measures are not essential. Nursing care is of prime importance, and if there is a state of shock, treatment should be directed against that; the experiences of some have indicated the possible, sometimes lifesaving, value of plasma itself in extreme cases. Most patients, however, do not have a high degree of shock.

The convalescent care includes rest in bed for a minimum of three weeks, a period which will suffice in a large number of cases but may need to be lengthened if there are complications. It is a common practice for rest in bed to be prescribed for three to four weeks and then for a month to be devoted to the return to a normal quiet life, the first week sitting in a chair more each day, the second week walking around on a level more each day, the third week going up and down stairs once a day and the fourth week getting out and around. It is often helpful and wise to arrange for a third month to consolidate the convalescence and to get the person back into good condition physically and mentally.

The use of Dicumarol or heparin, either to prevent coronary thrombosis or its spread or to treat the condition itself, hoping thereby to reduce the amount of intracardiac thrombosis, is still in the experimental stage. One of the important complications of coronary thrombosis is pulmonary embolism from venous thrombosis of the legs, and therefore it is well to keep the leg muscles, especially the calf muscles and feet, quietly active even during the first weeks in bed. This can be done without harm in the absence of important complications.

Other therapy during convalescence such as the use of digitalis and aminophylline depends on the need; in other words, symptomatic therapy should be the rule. A measure of possible importance and value, though difficult to prove, consists in the regular administration of quinidine sulfate 0.2 Gm. (or 3 grain) tablets four to six times a day. This may avert ventricular fibrillation during the first two weeks of the illness.

LOW BLOOD UREA NITROGEN

To the Editor:—A patient has an abnormally low blood urea nitrogen as an incidental finding. Most of the determinations are about 4 mg. per hundred cubic centimeters. The usual causes of a low blood urea nitrogen, such as severe liver disease, low protein intake or excessive fluid intake, have been ruled out as well as the possibility of a laboratory error. Please give references to similar cases in the literature and the possible mechanisms involved in such an abnormal lowering of the blood urea nitrogen.

M.D., Illinois.

Answer.—Either the normal limits of blood urea nitrogen or the technical error of its determination or both are subject to wider variations than is generally appreciated. The significance of very low values for blood urea nitrogen has been discussed by Bowman, R. O.; Crowell, F. F., and Oslon, L. F.: *J. Lab. & Clin. Med.* 30:706 (Aug.) 1945.

POSSIBLE PARINAUD'S CONJUNCTIVITIS

To the Editor:—A woman aged 35, who is a grocery clerk, gives the following history: For two weeks she had noted soreness at the outer angle of the left upper eyelid. A few days later she developed a preauricular adenitis which gradually became more swollen, moderately painful and extended beneath the angle of the left mandible. She had been using sulfadiazine ointment in the eye. The eyelids stuck together when she arose. *There had been no pain in the eye and no disturbance of vision.* The pupil of the right eye had been somewhat larger than that of the left for a long time and the patient did not think that this finding was related to the present condition. Physical examination revealed a temperature of 99.4 F. and pulse rate of 88. There was a large preauricular adenitis, firm, moderately tender, and nonsuppurative with some reddening of the skin. The left upper eyelid was mildly edematous. There was a minimal bulbar conjunctival reaction consisting of some engorgement of the vessels in the outer angle of the eye. Both upper and lower palpebral conjunctivas were acutely inflamed. There was no tearing and no discharge. Over the upper palpebral conjunctiva there was a thin, whitish exudative film which was mildly tenacious but could be removed without difficulty and without bleeding. At the outer angle of the left upper palpebral conjunctiva, about 1/8 inch from the lid margin, there was a papillary mass about 3/16 inch in diameter and elevated about 1/16 inch. The sharp, sloping under edges of this mass gave it the appearance of a small toadstool. It was not pedunculated, tender or ulcerated. The left pupil was smaller than the right, but both reacted well to light and in accommodation. Ocular tension was normal. The cornea, iris, lens, media, fundus and disk were normal. Smears made from the exudate and from conjunctival scrapings did not show inclusion bodies, bacteria or eosinophils, but many pus cells were present. The right eye was normal except for a questionable minimal exophthalmos. Treatment consisted in bed rest, warm moist compresses, 0.25 per cent zinc sulfate and codeine. The condition was unchanged after two days' treatment. Penicillin ophthalmic ointment was then prescribed, followed in one day by a slight decrease of the bulbar conjunctival reaction. During the next forty-eight hours the patient was given 360,000 units of penicillin intramuscularly in a dosage of 20,000 units every three hours. Twelve hours after the penicillin was started the pain disappeared and in four days the bulbar conjunctival reaction had completely subsided. The adenitis decreased progressively until it had practically disappeared after two weeks. The papillary mass remained about the same size and was treated with 1 per cent silver nitrate followed by irrigation with boric acid. Please discuss the nature of this illness and of the small mass on the upper lid. There was no history of possible tularemia or syphilis. What is the cause of the inequality of pupils?

M.D., Kentucky.

Answer.—It is difficult to make a diagnosis of the lesion described in the query. It is possible that a biopsy, culture and animal inoculation of the papillary conjunctival mass described would have given considerable information regarding the cause of this condition. It might not be too late at this time to excise the small mass, have part of it preserved for microscopic examination and the other part used for animal experiments, bacterial smears and cultures. Leptothricosis is a strong possibility. The organism is difficult to demonstrate, and every effort should be made to do this. The case described resembles Parinaud's conjunctivitis. Tularemia should be excluded by agglutination test of the blood in spite of the splendid response to penicillin, which would tend to rule out tularemia.

A unilateral dilated pupil may indicate some irritation of the cervical sympathetic, provided one is sure that there has been no local trauma to produce a paralysis of the sphincter. Irritation of the cervical sympathetic can be due to a lung apical lesion, pressure from the thyroid gland, enlargement of the mediastinal glands, cervical rib or other lesions in the area of the cervical sympathetic nerve.

PREGNANCY AND BRUCELLOSIS

To the Editor:—A woman has chronic undulant fever and is well controlled by brucellin therapy. She is now over six months pregnant, is in good physical condition and is pursuing a normal course. Can she breast nurse the baby without any danger of transmitting undulant fever through her milk to the newborn? What are the chances of premature birth in women with chronic undulant fever? In a previous pregnancy, at which time the undulant fever was unrecognized, she was in poor physical condition and gave birth when the fetus was 7 months old.

M.D., New Mexico.

Answer.—A good publication covering these questions is the paper on Undulant Fever in Children, by O. E. Hagebusch and C. F. Frei (*Am. J. Clin. Path.* **11**:497 [June] 1941). There is not enough experience to answer the first question satisfactorily. Insufficient additional unpublished experience indicates that the better the mother's disease is controlled during pregnancy and during lactation the safer it is for the babies to nurse, but it should be noted that the paper cited presents exceptions.

Morbidity data are inadequate to permit even an estimate of the frequency of abortions or premature deliveries caused by brucellosis. The paper cited documents a number of examples. It is known that for a small number of women who had previously experienced abortions or premature deliveries caused by brucellosis, favorable responses to vaccine therapy were accompanied with normal gestation periods and normal postpartum courses.

RECURRENT PHARYNGITIS

To the Editor:—A married woman aged 27 has had recurrent episodes of "sore throat" for many years. A tonsillectomy was performed at 6 years of age but the adenoids were not removed. At 12 years of age some lymphoid patches were removed from the pharynx. Attacks of pharyngitis occur from two to four times a month, regardless of season, usually without any known precipitating factor. Some attacks are accompanied with considerable thick postnasal secretion. Mouth breathing at night is usual. She has an angiospastic tendency: the hands and feet are usually cold during the winter months, and a few years ago on several occasions the fingers became bluish red while the patient was working indoors. Her general physical condition is good. Her height is 5 feet 8 inches (173 cm.), her weight 140 pounds (63.5 Kg.). The oropharynx presents patches of hypertrophied lymphoid tissue alternating with areas of pale mucosa where dilated vessels are seen during attacks. The nasopharyngeal vault contains reddish, scarred adenoid tissue. The basal metabolic rate was minus 15 and remained at this level on thyroid 1 grain (0.06 Gm.) per day. For four months she has been taking 25,000 units of vitamin A daily in addition to a normal diet. Recently she has received three x-ray treatments one month apart directed towards the nasopharynx and the oropharynx. The last treatment was given two months ago; no particular relief has been noted, for she recently had three attacks within a fortnight. The throat during one severe attack this winter yielded a pure culture of hemolytic streptococcus. Most of the episodes are controlled in a few days with sulfadiazine in small doses, but the repeated use of this drug seems inadvisable. Please discuss treatment. M.D., New York.

Answer.—It is not easy to make a diagnosis in the case described in the query, but it is hard to believe that the frequently recurring attacks of pharyngitis are independent of a local or general cause. Because the general physical condition is stated to be good, the most likely local cause to be sought would be a suppurative sinusitis. It is not likely that the sinuses involved would be the obvious ones, such as the frontal or maxillary sinuses. It is more probable that a suppurative condition, if present, would be in the posterior ethmoidal or the sphenoidal sinuses.

The first step in diagnosis would be an x-ray examination of all the sinuses. Iodized oil studies could be done at the same time. Probing and washing of all the suspect sinuses would be next in order. Discovery of a sinus suppuration, let us say in a sphenoidal sinus, could account for many if not all of the symptoms described. Treatment thereafter would be dictated by response to the usual therapeutic measures.

By a careful history, examination of nasal smears and skin testing an attempt should be made to determine the presence or absence of an allergic factor. Combinations of suppurative and allergic states are frequently stubborn, at times obscure, and capable of giving a clinical picture as described in the query.

VASECTOMY

To the Editor:—Two patients with moderate enlargement of the prostate and few symptoms of urinary or other disturbance have been told by their physicians that vasectomy should be performed to prevent enlargement and cancer of the prostate. What are the effects of vasectomy?

F. A. Mills, M.D., Rawlins, Wyo.

Answer.—Vasectomy will have no effect whatever on an enlarged prostate gland. It will not prevent cancer of the prostate. It is not indicated in the treatment of any disease of the prostate. It is done routinely in some clinics previous to operations for prostatic hypertrophy to prevent epididymitis.

AFTER-EFFECTS OF PROLONGED PENICILLIN ADMINISTRATION

To the Editor:—A patient received a large amount of penicillin for a long time. Have any renal or intestinal after-effects been reported from the prolonged administration of penicillin?

William D. Baun, M.D., Philadelphia.

Answer.—Aside from the patients who become sensitized to penicillin there is no evidence that there are any other after-effects. There is no literature that can be found indicating that there are renal or intestinal after-effects.

TOXICITY OF DETERGENTS

To the Editor:—What detergents are harmless if swallowed?

Reuben E. Stone, M.D., Washington, D. C.

Answer.—None of the newer chemical detergents are known to be perfectly safe to take by mouth. General information on cutaneous detergents may be found in the article by C. Guy Lane and Irvin H. Blank in The Journal, March 7, 1942, page 804.

SPECIFICITY OF WEIL-FELIX REACTION

To the Editor:—Please discuss the agglutination of proteins OX 19 (Felix-Weil reaction) in such diseases as pneumonia and infectious hepatitis. Positive agglutinations have been found in cases in which a diagnosis of virus pneumonia or hepatitis has been subsequently established.

Arthur R. Abel, Orange, N. J.

Answer.—The agglutination of the proteus OX strains (Weil-Felix reaction) is primarily of value in the laboratory diagnosis of certain rickettsial diseases. Since these proteus strains have nothing whatever to do with the etiology of the rickettsial diseases, the Weil-Felix reaction must be considered nonspecific. It is not surprising, therefore, that low titered reactions have been reported from a wide variety of clinical conditions, including cancer, malaria and pregnancy. Cross reactions with relatively high titers have been observed in typhoid, brucellosis, tularemia and Weil's disease, to mention a few. The sensitivity and specificity of the test vary considerably from laboratory to laboratory. Reliance on the Weil-Felix reaction as a diagnostic aid in rickettsial disease should rest primarily on the rise and fall in titer rather than on a single test. More specific tests for the rickettsial diseases, such as complement fixation and rickettsial agglutination, are gradually superseding the Weil-Felix test in many laboratories.

TENDON SUTURES IN FINGER AMPUTATIONS

To the Editor:—In a recent article in *Surgical Clinics of North America* Mock advocates in amputation of fingers the suture of flexor and extensor tendons to one another across the stump. In a recent article in the *Journal of Bone and Joint Surgery* this is not advocated in finger amputations. M.D., New York.

Answer.—Bunnell long ago emphasized the importance of not suturing flexor and extensor tendons to one another over the stump of an amputated finger, but on the contrary dividing them as far proximal as possible and permitting them to retract.

Both flexor and extensor tendons of the four fingers work more or less synchronously. They could be compared to a four horse team without horses harnessed abreast of one another. If one horse plants his feet firmly and refuses to move the team doesn't get very far.

Fixation of the ends of the tendons of an amputated finger can be so complete that secondary operation to free them may be necessary to permit free movement of the adjacent fingers.

SIGNIFICANCE OF BREAST STRIAE

To the Editor:—A Negro woman aged 30, unmarried, has white striae about both nipples, extending nearly to the bases of the breasts, and two lemon sized masses in the right and left iliac fossae apparently involving the ovaries. Are the striae positive signs of previous pregnancy or can they be due to uterine fibroids or disease of the uterine adnexa? M.D., Florida.

Answer.—Striae of the breast radiating from the areolas are not an absolute indication of pregnancy. They may develop during adolescence, particularly in the obese girl with large breasts. Striae over the thighs are likewise seen during this developmental period when the immature girl develops the mature figure. Striae of the lower part of the abdomen are less often associated with puberty and adolescence and are more often associated with or a residual finding of gestation. However, here too its presence must not be accepted as an absolute sign of a pregnancy.

Abdominal striae are thought to be due to the hypertrophic changes in the abdominal wall associated with pregnancy rather than to the distention by the growing uterus. The striae of the breasts and hips may have a similar etiology.

CORNEAL TATTOOING

To the Editor:—In Queries and Minor Notes (Nov. 2, 1946, p. 546) is an answer to the question "Is there a better method of corneal tattooing than using 2 per cent platinum chloride followed by 2 per cent aqueous hydrazine hydrate?" I should like to point out that the pupillary area of the cornea is not the only zone where tattooing is indicated. The cosmetic effect of tattooing may be indicated on any part of the cornea. Platinum chloride and hydrazine hydrate solutions, therefore, are not the only ones to be used. Gold chloride followed by epinephrine gives a brown iris effect for the extrapupillary area. Then too, platinum chloride alone will not always give the desired effect, so occasionally the combination of platinum and gold over the pupillary area will result in a blacker pupil. It might also be mentioned that it is feasible to tattoo both black and brown in juxtaposition. Another point of importance is the fact that it is unnecessary to use a trephine to give the appearance of a round pupil, for it is surprising how well an irregularly outlined area looks. Arthur Alexander Knapp, New York.

The Journal of the
American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 133, No. 6 CHICAGO, ILLINOIS FEBRUARY 8, 1947

Copyright, 1947, by American Medical Association

TUBERCULOSIS CASE FINDING

A Comparison of the Effectiveness of Various Roentgenographic and Photofluorographic Methods

CARL C. BIRKELO, M.D., Detroit
W. EDWARD CHAMBERLAIN, M.D., Philadelphia
PAUL S. PHELPS, M.D., Hartford, Conn.
PERCY E. SCHOOLS, M.D., Richmond, Va.
DAVID ZACKS, M.D., Boston
and
JACOB YERUSHALMY, Ph.D., Washington, D. C.

Within a relatively short time photofluorography has been transformed from a crude experiment to an efficient diagnostic aid. It may be estimated that within the last six years some 20 million Americans have had x-ray examinations of the chest. The vast majority of these would not have had this service if they had had to depend on the conventional 14 by 17 inch celluloid film. The outlook for the future is that mass radiography will further expand and that a majority of the adult population will receive this service.

The radiographic technics and sizes most commonly used are 35 mm. photofluorography, 4 by 10 inch stereophotofluorography, roentgenography on 14 by 17 inch paper and film negatives and, in recent months, 70 mm. photofluorography. Individual preferences for one or the other of these technics are based, as far as can be determined, on considerations of economy, ease of operation, individual likes and dislikes and availability of the different machines. However, the most important, indeed the crucial, determining factor must, in the final analysis, be their relative diagnostic efficiency, i. e. the ability of the different methods to detect pulmonary lesions. Up to now no comprehensive study has been made in this country in which all the technics were subjected to a rigorous test.

The need for such a comprehensive evaluation of the different roentgenographic and photofluorographic methods was realized early in 1944 by the administrator of veterans' affairs. The Veterans Administration was faced with the problem of keeping on file and evaluating at least two films for each veteran: one taken at the time of induction and one taken at the time of discharge, as well as some others which may have been taken during the period of service in the armed forces. Some of these were 35 mm., 4 by 5 inch or 4 by 10 inch photofluorograms; others were the conventional 14 by 17 inch celluloid films. General Hines, then administrator of veterans' affairs, therefore appointed a Board of Roentgenology to investigate this problem. The mandate given this board was to investigate the relative diagnostic efficiency of the various technics, neglecting all other considerations, such as cost and ease of operation.

The Board of Roentgenology appointed by the administrator of veterans' affairs consisted of Dr. C. C. Birkelo of Detroit, Dr. W. Edward Chamberlain of Philadelphia, Dr. Paul Phelps of Hartford, Conn., Dr. Percy Schools of Richmond, Va., and Dr. David Zacks of Boston. The members elected Dr. W. Edward Chamberlain chairman of the board. At the request of the administrator the U. S. Public Health Service made available the services of Dr. Jacob Yerushalmy as statistician to assist in the direction and analysis of this study.

MATERIAL AND METHOD OF INTERPRETATION

In selecting the material on which to base this study the board was desirous of simulating as nearly as possible the conditions of mass survey work for which these technics are ordinarily utilized. Accordingly, the entire population of two Veterans Administration institutions, one located in Bronx, New York, the other in Dayton, Ohio, were surveyed. The populations in these institutions were of three different types: (1) employees, (2) ambulatory patients of a general hospital and (3) residents for domiciliary care. The last group consisted, in the main, of relatively old veterans of World War I.

A 35 mm. photofluorogram, a 4 by 10 inch stereophotofluorogram, a roentgenogram on a 14 by 17 inch paper negative and a conventional 14 by 17 inch celluloid film[1] were taken within a few minutes of one another on each person participating in the study. The companies providing the machines[2] made special efforts to produce films of the best possible quality.

The material for the study provided by the survey consisted of a set of 14 by 17 inch celluloid films and similar sets of 35 mm. and 4 by 10 inch photofluorograms and 14 by 17 inch paper negatives, all on the same individuals taken at the same visit. These four sets of films were interpreted independently by the five

---

Read before the Section on Radiology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

This paper has been abbreviated on account of limitations of space. The complete paper can be found in the authors' reprints, which will be available on request.

Mrs. Sarah E. Yelton of the U. S. Public Health Service and Mrs. Ruth Levey of the Veterans Administration rendered assistance in assembling and analyzing the material used in this paper.

Published with the permission of the Chief Medical Director, Department of Medicine and Surgery, Veterans Administration, who assumes no responsibility for the opinions expressed or the conclusions reached by the authors.

[1] At the time the survey was conducted, the 70 mm. technic had not yet been developed.

[2] The 4 by 10 inch stereophotofluorograms were taken and processed by the General Electric Company, the 14 by 17 inch paper negatives were taken and processed by Powers X-Ray Products, Inc., the U. S. Public Health Service made available and processed the 35 mm. films, using a Westinghouse machine, and the 14 by 17 inch celluloid films were taken with the Veterans Administration Picker machine. Eastman Kodak provided the technicians for the operation of the Picker machine and developed the 14 by 17 inch celluloid films.

members forming the Board of Roentgenology. The procedures used were as follows:

Prior to reviewing any of the films the board convened, reached agreements on nomenclature and developed a code for classifying the films into distinct categories in as uniform a way as possible. Members of the board also reviewed samples of films made with the various technics (not included in the study), classifying them independently and in conference, in an attempt to arrive as nearly as possible at uniformity in nomenclature. This provided an actual test of the suitability of the code.[3]

Each reader received only one group of films at a time. In no case did a reader review the 14 by 17 inch celluloid films before he had completed his interpretations on all the other technics. No reader received a group of films for any technic while he had the corresponding group for another technic. After all the interpretations of the four technics were received, and after a lapse of at least two months, the 14 by 17 inch celluloid films were again sent to each reader for a second independent interpretation

Because the studies of the Dayton films are as yet incomplete, the present report is based on the analysis of the Bronx series only. The 1,256 films taken there form the basis for this report.

TABLE 1.—*Readers Calling 14 by 17 Inch Films Positive*

Number of Readers Calling Film Positive for Tuberculosis	Number of Films
1	47
2	23
3	17
4	17
5	27

ANALYSIS

The object of the analysis is to obtain a measure of the efficiency of the different technics in selecting the individuals with chest disease from among the study group. Specifically, the following two measures need to be obtained for each technic.

1. The percentage of persons with chest disease whose films were read as negative by the technic (underreading or misses)

2 The percentage of films called positive by the technic on persons having no chest disease (overreading or false positives)

Obviously, care must be taken that these indexes should measure the limitations of the technic and not the subjective errors of the readers.

In order to be able to obtain the two percentages, it becomes necessary to devise means for identifying the persons in the study group who have roentgenologic evidence of chest disease.

This simple question is the most crucial and the most difficult to answer. As an illustration of the difficulties involved it may be well to list the different kinds of answers that may be obtained to the question of how many persons in the study are positive for tuberculosis.[4]

On the basis of the 14 by 17 inch celluloid film interpretations there were 131 cases called positive by one or more readers. For the different readers the number of "positives" varied from 56 to 100. In other words, there was one reader who selected only 56 positives, one with 100 positives and 3 with an intermediate number of positives.

The number of cases called positive by a single reader on one or more technics varied from 74 to 170. The number of cases called positive by one or more readers on one or more technics was 262.

Other and probably more desirable methods of defining positive cases are those which reflect "group opinion." For example, the 14 by 17 inch celluloid film interpretations may be tabulated according to the number of readers calling each film positive. This yields the tabulation presented as table 1. This table not only affords a method of defining positive cases in different ways, but also yields a measure of reliability which may be attributed to each definition In other words, the probability that the 27 films which all five readers called positive represent cases of tuberculosis is enormously greater than that of the 47 cases represented by films which were called positive by only one of the five readers. A large proportion of the latter, no doubt, represent overreading on the part of one or the other of the readers.

As a practical point of departure a case of tuberculosis may be defined as one which a majority of the readers (three or more) called positive on the 14 by 17 inch celluloid. Under this definition there were 61 positive cases.

This discourse on the wide variability of the possible number of positive cases, confusing as it is, is presented because it is an essential starting point for the analysis. The purpose of mass x-ray surveys is to identify the individuals in the group requiring further study. If the number of such individuals cannot be determined, it would obviously be impossible to measure the efficiency of the various technics. Moreover, the purpose of the study is to evaluate the deficiencies of the different technics which are due to the limitations of the technic itself and not to extraneous factors. It is obvious from the procession of figures given that even when limited to one technic, the 14 by 17 inch celluloid, tremendous variation exists among the different readers Consequently, variations among the different technics, as measured by underreading and overreading, represent a composite picture due partly to the technic and partly to subjective or human errors involved in film interpretation It therefore becomes important in the analysis to attempt to develop methods which would eliminate, or at least greatly reduce, the subjective errors of interpretation and retain only that part of the variation which is inherent in the technic.

As an initial step it may be well to attempt to obtain measures for the subjective errors. These subjective errors are of two main types:

1 Interindividual variation, or the failure of an individual reader to be consistent with other readers in interpreting the same set of films

2 Intraindividual variation, or the failure of a reader to be consistent with himself in two independent interpretations of the same set of films

Interindividual Variation.—A measure of the magnitude of the interindividual variation may be obtained by comparing the interpretations of the five readers on the 14 by 17 inch celluloid films. The result of this analysis is shown in table 2. In this table the interpretations of each reader are compared with those of each of the other readers in two ways. In the first part of the table the requirements of consistency are more strict than in the other, in that it is required that both readers agree on the diagnosis of tuberculosis. In the second part of the table two readings are considered to be in agreement also when one of them is that of nontuberculous disease or even if it is read "essentially negative" with a notation of "pulmonary scars."

---

[3] A detailed description of the code will be given in a future publication. Briefly, the code provided for the classification of a film in broad pathologic categories and in specific diagnostic classifications In addition whenever a reader observed evidence of tuberculosis, he was required to indicate on a rib cage diagram the location and character of the observed lesions For such cases he was also required to express his impression regarding activity in terms of three classifications "probably active," "questionably active" and "probably inactive"

[4] The analysis in this report will be limited to tuberculous lesions The question of nontuberculous lesions will be dealt with in a subsequent paper

The meaning of the table can probably be made clearer by following across any of the rows, such as the one headed *N*. There were 59 films called positive for tuberculosis by reader *N*. The table shows (underscored figures) that reader *M* called 31 per cent of these "negative for tuberculosis," reader *O* 29 per cent, reader *P* 37 per cent and reader *Q* 14 per cent. The second part of the table shows that under the more liberal interpretation there were very large reductions in the percentage disagreement. For example, the disagreement with reader *M* is reduced from 31 per cent to 5 per cent, with reader *O* from 29 to 10, with reader *P* from 37 to 19, and with reader *Q* from 14 to 7 per cent.

It is striking that experienced radiologists and chest specialists find such difficulty in being consistent with one another in classifying films in broad categories of evidence of tuberculosis. It is even more surprising to find in some cases that 20 per cent of the films which were called positive for tuberculosis by one reader were called negative by another.

Intraindividual Variation.—Some of these differences are, no doubt, due to the varied background and experience of the five readers. However, this by no means accounts for the entire variation because considerable differences are noted also when the same individual reads the same set of films a second time. A measure of this intraindividual variation may be obtained from table 3, which compares for each of the five readers his two independent interpretations of the 14 by 17 inch celluloid films.[5]

The meaning of table 3 may probably be best explained by following one of the rows. For example, reader *N* read 59 films as positive for tuberculosis on his first reading. Of these he called 7 per cent of the cases negative for tuberculosis on the second reading, and in 3 per cent of the films the second reading was that of straight negative. (See underscored percentages in table 3.) On the other hand, the same reader called 78 cases positive for tuberculosis on the second reading. In 29 per cent of these cases the first reading was negative for tuberculosis and 22 per cent of these cases were called straight negative on the first reading.

A review of table 3 indicates that there are considerable subjective errors in the two independent interpretations of each reader. This variation is not due to any difference in the method of reading between the first and the second time because there was no consistency in the direction of the error among all readers. For example, while readers *M*, *N* and *O* read more positives on the second reading than on the first reading, readers *P* and *Q* had more positives on the first than on the second reading. The major part of the variation, therefore, is due primarily to the inability of an individual reader to be consistent with himself in two independent interpretations of the same set of films.

A COMPARISON FOR EACH READER BETWEEN THE INTERPRETATIONS OF THE 14 BY 17 INCH CELLULOID FILMS AND THOSE OF EACH OF THE OTHER TECHNICS

In nearly all comparative studies of this kind the interpretations of a reader on the study technic are compared with his readings on the standard 14 by 17 inch celluloid films. It may therefore be well to determine from the present study what conclusions can be reached from such a comparison.

TABLE 2.—*Interindividual Variation*

(14 by 17 Inch Celluloid Films Only)

To show how many of the films which were called positive for tuberculosis by each of the five readers were called (*a*) "negative for tuberculosis" and (*b*) "essentially negative" by each of the other readers. ("Essentially negative" means negative for nontuberculous as well as tuberculous disease)

Of Films Called Positive for Tuberculosis by Reader	Number of Films	(a) Percentage Called Negative for Tuberculosis by Reader					(b) Percentage Called Essentially Negative by Reader				
		M	N	O	P	Q	M	N	O	P	Q
M	62	.	34	31	45	19	..	13	11	24	13
N	59	31	..	29	37	14	5	.	10	19	7
O	70	39	40	..	43	17	9	19	..	19	11
P	56	39	34	29	..	11	7	14	11	..	9
Q	100	50	49	42	50	..	14	20	14	20	..

TABLE 3.—*Intraindividual Variation*

(14 by 17 Inch Celluloid Films Only)

To show how many of the films which were called positive for tuberculosis by each of the five readers on one reading were called (*a*) "negative for tuberculosis" and (*b*) "essentially negative" by the same reader on the other reading.

	Second Reading Compared to First			First Reading Compared to Second		
Reader	Number of Films Called Positive for Tuberculosis on First Reading	Percentage Called Negative for Tuberculosis on Second Reading	Percentage Called Essentially Negative on Second Reading	Number of Films Called Positive for Tuberculosis on Second Reading	Percentage Called Negative for Tuberculosis on First Reading	Percentage Called Essentially Negative on First Reading
M	118	16	11	139	29	27
N	59	7	3	78	29	22
O	83	18	12	88	23	13
P	96	41	31	69	17	14
Q	100	22	14	88	6	3

Table 4 presents for each of the five readers the percentage of films called positive for tuberculosis on the standard which he called (*a*) "negative for tuberculosis" and (*b*) "essentially negative"[7] on each of the study technics.[8] Following this table along any of the rows will assist in understanding the meaning of the percentages presented. For example, it will be noted that reader *N* (the underscored row in the table) read fifty-nine 14 by 17 inch celluloid films as positive for tuberculosis. He failed to diagnose tuberculosis in 27 per cent of the corresponding 35 mm. films, in 30 per cent of the 4 by 10 inch films and in 24 per cent of the paper negatives. He failed to note the presence of any lesion (tuberculous or nontuberculous) in 22 per cent of the 35 mm. films, in 29 per cent of the 4 by 10 inch films and in 17 per cent of the 14 by 17 inch paper negatives.

---

[5] Certain adjustments had to be made in constructing this table. Between the first and second reading of the 14 by 17 inch celluloid films the readers decided to change the procedure of recording on films designated "pulmonary scars." At the first reading such a classification could have been given with either a reading of "positive for tuberculosis," "suspicious for tuberculosis" or "essentially negative." A review of these interpretations showed decided inconsistency among the several readers. It was therefore decided that in the second reading "pulmonary scars" were to be given only with the classification of "positive for tuberculosis." Consequently, in comparing the first and second readings, all readings of "pulmonary scars" in the first reading were considered as accompanying the classification of "positive for tuberculosis."

[7] "Essentially negative" means negative for nontuberculous as well as tuberculous disease.

[8] For simplicity, only the problem of underreading is considered here. Overreading will be considered briefly in a later chapter of this report. A more detailed analysis of overreading will be presented at a later date.

From the performance of reader *N* as shown in the table, one would be tempted to conclude, first, that none of the study technics can be considered efficient (the lowest percentage missed is 17) and, second, that if a choice needs to be made among the three study technics, the 14 by 17 paper negatives have an edge over the two miniature technics.

TABLE 4.—*Comparison of Technics*

To show how many of the cases which were called positive for tuberculosis by each reader on the 14 by 17 inch celluloid films were called (*a*)"negative for tuberculosis" and (*b*)"essentially negative" by the same reader on each of the other technics.

Of Films Called Positive for Tuberculosis on the 14 by 17 Inch Celluloid Films by Reader	Number of Cases	(a) Percentage Called Negative for Tuberculosis by the Same Reader on			(b) Percentage Called Essentially Negative by the Same Reader on		
		35 Mm	4 by 10 Inch Stereo	14 by 17 Inch Paper	35 Mm	4 by 10 Inch Stereo	14 by 17 Inch Paper
M	62	29	13	23	13	8	13
N	59	27	30	24	22	29	17
O	70	29	34	41	17	19	23
P	56	4	5	11	4	5	5
Q	100	9	28	13	6	25	9

TABLE 5.—*Cases Missed*

To show how many of the cases which were called positive for tuberculosis by two or more, three or more, four or more or five readers on the 14 by 17 inch celluloid films were called (*a*)"negative for tuberculosis" and (*b*) "essentially negative" by three or more readers on each of the other technics

Number of Readers Calling Case Positive for Tuberculosis on the 14 by 17 Inch Celluloid Film	Number of Cases	(a) Percentage Called Negative for Tuberculosis by Three or More Readers on			(b) Percentage Called Essentially Negative by Three or More Readers on		
		35 Mm	4 by 10 Inch Stereo	14 by 17 Inch Paper	35 Mm	4 by 10 Inch Stereo	14 by 17 Inch Paper
2 or more	84	27	26	29	14	12	10
3 or more ..	61	10	11	10	5	5	5
4 or more	44	5	5	5	2	5	2
5	27	..	4	..	..	4	..

However, neither of these conclusions is justified. For, first, reference to table 3 shows that the same reader *N* missed on his first reading of the 14 by 17 inch celluloid films 22 per cent of those which he called positive for tuberculosis on the second reading of the same 14 by 17 inch celluloid films. In other words, the relatively high percentages shown in table 4 do not necessarily measure the limitations of the different technics, but, to a large extent, the subjective errors in interpretation for reader *N*.

Similarly, it is not possible to conclude that the paper negatives are more reliable than the miniature technics because the same results are not found for all the readers. For example, for reader *M* the score on the 4 by 10 inch is better than on the other two, while for readers *O* and *Q* the 35 mm. stands out better than the others.

It may therefore be concluded that from a simple comparison as shown no valid conclusions may be drawn on the relative diagnostic efficiency of the different photofluorographic technics. Other methods of analysis need to be set up to answer the question under investigation.

It may be added parenthetically that a suggestion that all the study technics are relatively efficient may be obtained from a comparison of tables 3 and 4. This inference is obtained from the fact that nearly every one of the five readers missed almost as many cases on a subsequent rereading of the 14 by 17 inch celluloid films (table 3) as he missed on any of the other technics (table 4).

ANALYSIS OF GROUP PERFORMANCE

In view of the difficulties presented, it becomes necessary to devise a method of analysis which reduces as much as possible the effect of interindividual and intraindividual variations and which, at the same time, accentuates the inherent limitations of the different technics. Such a method, it is believed, may be obtained by basing the analysis on "group opinion." There are a number of valid objections to the "group opinion" definition when such an opinion is obtained in conference and in consultation. In this material, however, a "group opinion" may be obtained which is based on the independent interpretations of the individual readers.

The rationale behind this method of analysis may be formulated somewhat as follows: The classification of an individual, on roentgenologic evidence, as being positive or negative for tuberculosis depends not only on whether or not a shadow exists on his x-ray but also on whether the shadow is such that it can be perceived by an interpreter. In other words, if a shadow can be shown by precision instruments to be present on the x-ray film, but if it cannot be perceived under normal reading practice, such a shadow is for all practical purposes nonexistent

Now if a film has been called positive by only one of five competent readers and negative by the other four, it is idle to speculate whether a lesion is really present and the four have missed it or whether the single positive reading represents overreading. For all practical purposes it may be concluded that, even if a lesion exists, the technic is not capable of identifying it since it escaped detection by four out of five readers.

When a film is called positive by more than one reader, however, greater reliability may be assumed, not only that the case may be positive, but also that the technic in question is capable of detecting the lesion Moreover, the subjective errors are greatly reduced For example, if a reader has a 20 per cent chance of missing a positive film, the chances that the same film will be missed by several readers, each grading independently of the others, are enormously reduced.

With this in mind it becomes possible to measure the relative diagnostic efficiency which is inherent in the different technics. If the 14 by 17 inch celluloid film is considered the standard with which to compare the performance of the study technics, it first becomes necessary to define positive cases by "group opinion" on the 14 by 17 inch celluloid films. The performance of the different technics in selecting the corresponding films for these cases will be a measure of their diagnostic efficiency. The ability of a technic to select these films will again be obtained by "group opinion." In other words, if such a film is called positive on a given technic by only one or even two of the five readers, it may be stated that although the shadow may be present in the study film it is not sufficiently distinct since a majority of the readers missed it.

It should be reemphasized here that it is only because the original readings were independent that the "group opinion" may be used for the purpose. No "conference opinion" can attain the objective quality which is essential to the method.

A practical method of lining up the three study technics would be to determine the percentage of films which were missed on each technic by a majority of the readers (three or more) out of such cases which were called positive by a majority of the readers (three or more) on the 14 by 17 inch celluloid films.

Such a comparison is afforded in table 5 according to several definitions of positive cases, i. e. cases called positive for tuberculosis on the 14 by 17 inch celluloid films by two or more, three or more, four or more or all five readers.

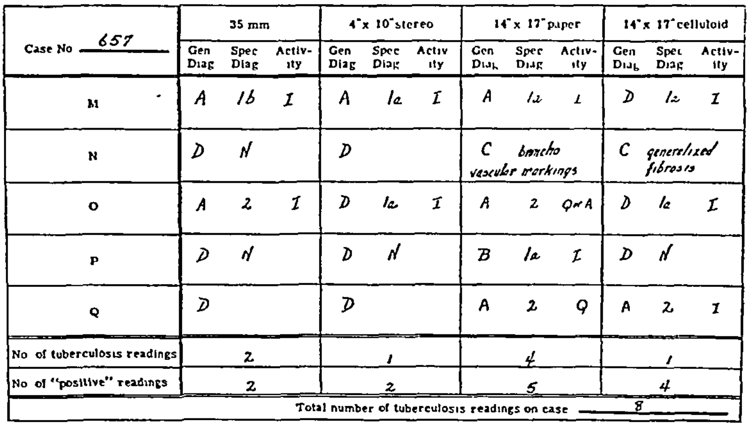
It is striking that, no matter what definition of "positive" is used, the three study technics miss approximately the same percentage of the cases. For example, of the 61 cases called positive for tuberculosis on the 14 by 17 inch celluloid by a majority of the readers (the underscored figures) each technic failed to diagnose tuberculosis for approximately 10 per cent of the cases. In terms of the more liberal interpretation of agreement, the lesion was seen in 95 per cent of the cases on each one of the technics.

It may therefore be concluded that the 35 mm. films, the 4 by 10 inch films, and the 14 by 17 inch paper negatives are equally efficient in selecting positive cases.

OBJECTIVE COMPARISON OF ALL FOUR TECHNICS

In the comparisons made thus far the 14 by 17 inch celluloid film was considered the standard and the performances of the other technics were compared to it. The material available in this study makes possible an objective comparison of the four technics which utilized the evidence provided by all four technics and which is free from any preconceived evaluation of any of the technics. It affords a method of comparison which not only is free from interindividual and intraindividual variation but makes possible also the lining up of the four technics on a number of different levels in terms of different definitions of what constitutes a positive case. A key to this method of analysis is provided by the fact that for each subject in this study there are available four different films. These films were interpreted by five readers, thus providing twenty independent readings or diagnoses. These twenty interpretations can be assembled on one card as is illustrated in the work card. The subjects can therefore be divided into twenty-one groups. One group, the largest (994 persons), consists of those for whom not one of the twenty readings was positive for tuberculosis. The remaining are divided into twenty groups according to the number of positive readings. There were, for example, 101 persons on whom there was only one positive reading out of a possible twenty, thirty-seven with two, fifteen with three positive readings and so on. The final group (in which there were twenty-one) consists of cases in which all twenty readings were positive. The case illustrated in the work card falls in the group with eight readings positive for tuberculosis.

Table 6 provides means for classifying the individuals according to different degrees of "positiveness" for tuberculosis. A case having, for example, only one or two positive readings out of a possible twenty has a smaller probability of being really positive than a case with eight or ten positive readings. In fact it is almost certain that most of the persons in some of the lower groups are not positive at all but represent occasional overreading. As the number of positive readings begins to pile up, the probability of tuberculous disease increases. Certainly the need for further investigation on these cases is increased. This table may therefore be used for the purpose of defining the group which should be selected for further study in a mass x-ray survey. Such definition may vary according to individual practice and preference. The important thing, however, is that, once a definition of "positiveness" is arrived at, it becomes a simple matter to select these "positive" cases and count the number of positive readings given by the five readers on each of the different technics. The technic which is superior to any of the others should furnish a larger number of positive readings on these films than would a technic which was less satisfactory.



Case No 657	35 mm			4"x 10" stereo			14"x 17" paper			14"x 17" celluloid		
	Gen Diag	Spec Diag	Activity	Gen Diag	Spec Diag	Activity	Gen Diag	Spec Diag	Activity	Gen Diag	Spec Diag	Activity
M	A	1b	I	A	1a	I	A	1a	I	D	1a	I
N	D	N		D			C	broncho vascular markings		C	generalized fibrosis	
O	A	2	I	D	1a	I	A	2	Q or A	D	1a	I
P	D	N		D	N		B	1a	I	D	N	
Q	D			D			A	2	Q	A	2	I
No of tuberculosis readings	2			1			4			1		
No of "positive" readings	2			2			5			4		
Total number of tuberculosis readings on case 8												

A work card illustrating the assembling of all the readings on each case On the card are twenty boxes in which are noted the readings of the five readers on the four technics. Each reading consists of three parts: a general diagnosis (A or B is tuberculosis, C non tuberculous disease, D essentially negative); a specific diagnosis (1a pulmonary scar, 1b minimal, 2 moderately advanced and 3 far advanced), and the impression of activity (A probably active, Q questionably active and I probably inactive) The illustrated card represents a case with eight readings positive for tuberculosis and thirteen total "positive" readings for tuberculosis and/or nontuberculous disease

This procedure was followed in table 6. For example, there were 171 cases in which there were only one to five positive readings out of a possible twenty. There were an additional 29 in which the number of positive readings was six to ten and 62 cases with eleven or more out of a possible twenty positive readings.

In each one of these classifications the table shows the number of positive readings which were actually obtained on each of the four technics. For example, considering the 62 cases with eleven or more positive readings (underscored row in the table), if a technic were perfect and if the readers were perfect in a nonhuman way there would have been recorded on them a total of 62 × 5, or 310 positive readings. The actual numbers of readings positive for tuberculosis were 259 for the 35 mm., 259 for the 4 by 10 inch, 259 for the 14 by 17 inch paper and 250 for the 14 by 17 inch celluloid films. In other words, all four technics have equal efficiency in selecting these cases that require further study.

When the more liberal definition is used, i. e. when all positive readings (tuberculous and nontuberculous) are counted for these cases (the second part of the table), there is a slight advantage to the 14 by 17 inch celluloid method. The numbers of positive readings in this case were 288 for the 35 mm., 286 for the 4 by 10 inch, 294 for the 14 by 17 inch paper and 303 for the 14 by 17 inch celluloid films. In other words, some supplementary useful detail may be expected on the 14 by 17 inch celluloid films in a small additional number of cases.

A careful review of the table shows that these results are not limited to positive cases as defined by eleven or more positive readings but that they hold with equal force when positive cases are defined by any other number of positive readings. The only exception is that in which the number of positive readings is as low as five or less. A considerable number of these undoubtedly represent occasional overreading or false positives.

TABLE 6.—*Means for Classification*

To show for each technic the number of readings (five readers) that were (a) "positive for tuberculosis" and (b) "positive for tuberculosis and/or nontuberculous disease" when the cases are classified according to the total number of times a case is diagnosed, as "positive for tuberculosis" out of a possible 20 times (five readers on four technics).

			(a) Number of Readings Positive for Tuberculosis (Five Readers) on				(b) Number of Readings Positive for Tuberculosis and/or Nontuberculous Disease (Five Readers) on			
Total Number of Readings Positive for Tuberculosis in All Readings on All Technics	Number of Cases	Maximum Possible Number of Positive Readings on Any One Technic	35 Mm.	4 by 10 Inch Stereo	14 by 17 Inch Paper	14 by 17 Inch Celluloid	35 Mm.	4 by 10 Inch Stereo	14 by 17 Inch Paper	14 by 17 Inch Celluloid
1 - 5	171	855	109	90	49	50	228	210	188	206
6 - 10	29	145	54	54	58	47	96	106	109	101
11 - 13	12	60	36	36	37	37	49	51	53	57
14 - 16	20	100	79	76	75	69	92	87	92	96
17 - 19	9	45	39	42	42	39	42	43	44	45
20	21	105	105	105	105	105	105	105	105	105
11 and over	62	310	259	259	259	250	288	286	294	303

It is important to note here that many additional tables were prepared to test any possible evidence which would limit this method of analysis. For example, it was at first suspected, in view of the rather striking lack of superiority of the 14 by 17 inch celluloid films, that there may have been a tendency for "bunching" of the 14 by 17 inch celluloid readings on positive cases, on which the other technics failed to record any considerable number of positive readings. It was found, however, by all tests that could be devised that this was not the case.[9]

Overreading, or False Positives.—The problem of false positives, or the percentage of films overread, is, of course, also an important consideration in mass survey work. It is probably not as important as underreading, however, because in most survey work a confirmatory 14 by 17 inch celluloid film is taken on all cases called positive by the miniature technics. Nevertheless, considerable inconvenience and anxiety are caused by overreading. It becomes important, therefore, to compare the amount of overreading produced by the different technics. Here again a definition of false positives is required.

One method of defining overreading may be obtained from table 6. It is almost certain, for example, that a case which was called positive by only one reader on only one technic, that is, a case which had only one positive reading out of a possible twenty, is not a case at all but represents overreading. It is more difficult to decide, as the number of positive readings increases, when overreading stops and possible disease begins. However, for the purpose of comparing the different technics for overreading tendencies, it may be sufficient to analyze the cases with five or less positive readings, especially since for cases with more than five positive readings no real difference is apparent between the different technics.

There were 171 cases with five or less positive readings. Specifically, there were 101 cases with only one positive reading, 37 with two, 15 with three, 12 with four and 6 with five positive readings. The smaller the technic the greater was the chance for overreading. For example, of the 101 cases with only one positive reading, 46 were read positive on the 35 mm., 32 on the 4 by 10 inch, 13 on the paper negatives and 10 on the 14 by 17 inch celluloid films. Again, of the seventy-four positive readings on the 37 cases with two positive readings, twenty-one were on the 35 mm., twenty-seven on the 4 by 10 inch, eleven on the paper and fifteen on the celluloid films. The same is true for the other classifications.

Further investigation, however, revealed that by far the greater part of the difference between the technics is attributed to two readers, one of whom read a large number of positives on the 35 mm. (reader *O*), and another who read a large number of apparently false positives on the 4 by 10 inch (reader *M*). For example, of the forty-six false positives on the 35 mm., forty are due to reader *O*, and of the thirty-two single positive readings on the 4 by 10 inch twenty are due to reader *M*. When these readings are neglected, the technics line up in an almost identical way. In other words, it is only because of the tendency of one person that the overreading looms so much larger for each of the miniature technics. Moreover, as may be seen from the second part of table 6, the technics are much more nearly alike even for the group of one to five positive readings under the more liberal definition.

---

[9] A more detailed analysis of this and other points will be presented in subsequent publications.

COMMENT

In evaluating the results of this study, it must be borne in mind that the purpose was to determine the efficiency of the different technics in selecting positive or suggestive cases of tuberculosis; in other words, to determine the efficiency of these technics for case-finding purposes, in identifying in mass surveys the persons requiring further study. It was not set up to determine the efficiency of the different technics in the more detailed and sensitive phases of x-ray work in clinical diagnosis. No doubt the texture and morphology of individual tuberculous lesions are less adequately visualized in the miniature films. This may lead to a certain amount of overreading when miniature films are utilized, and this overreading may constitute a real problem under some circumstances. It was found, however, that the amount of overreading is slight and that it can be traced to only one reader for each of the miniature technics. Therefore, even this slight handicap can apparently be overcome by personal training.

It may therefore be concluded from the foregoing tabulations and analysis that purely from the standpoint of their effectiveness in finding cases of tuberculosis, none of the methods, not even the 14 by 17 inch celluloid, is superior to any of the other methods.

SUMMARY

A Board of Roentgenology was appointed by the administrator of veterans' affairs to study the effectiveness, for tuberculosis case finding, of various roentgenologic and photofluorographic methods.

A 35 mm. photofluorogram, a 4 by 10 inch stereophotofluorogram, a 14 by 17 inch paper negative and a 14 by 17 inch celluloid film were taken, within a few minutes of one another, on each of 1,256 persons. The four sets of films were interpreted independently by two radiologists and three chest specialists. A second independent reading of the 14 by 17 inch celluloid films was obtained from each of the five interpreters.

The material was analyzed in considerable detail as to the variation resulting from the limitations of the various methods as well as from the subjective errors inherent in film interpretation. The results of the analysis justify the conclusions that, except for a slight disadvantage to the miniature technics resulting from overreading, not one of the methods, not even the 14 by 17 inch celluloid, is superior, for case finding purposes, to any of the other methods.

In addition to this conclusion, a number of other recommendations may be derived from this study. These are as follows:

1. The problem of interindividual and intraindividual variation in film interpretation is of such large magnitude that it becomes important to subject this problem to a very extensive and detailed investigation.

2. That a revision of the method of classifying x-rays, including that of the National Tuberculosis Association classification, is needed. Such revision must be based on extensive study and actual experimentation.

3. In mass survey work it is recommended that all survey films be read independently by at least two interpreters. All persons whose films were selected as positive or suggestive for tuberculosis by one or the other of the interpreters should be recalled for further study.

ABSTRACT OF DISCUSSION

DR. L. HENRY GARLAND, San Francisco: I am in complete agreement. The effectiveness of a radiographic method of case finding depends on the interpreters chosen: the more skilled and interested the interpreter, the better the results. The interpreter should choose the film size most practical for the location and the magnitude of the task at hand. Less discrepancy might have transpired in their investigation had the films been read by radiologists familiar with and experienced in the methods used and conservative in their diagnostic conclusions. This is exemplified by the statement that there were "cases which were called moderately advanced tuberculosis on one reading and negative on another." The authors evolved a code for classifying their reports which contains four divisions and sixteen subdivisions; this seems to me rather elaborate for practical use with survey films, especially minifilms. The paper contains numerous references to "films positive for tuberculosis": the unequivocal diagnosis of tuberculosis cannot be made from a film alone; indeed, the pathologist with the gross specimen in his hand often cannot reach such a diagnosis. It would be preferable to use some expression such as "shadows presumably due to tuberculosis." The sentence "on the basis of the 14 by 17 celluloid film interpretations the number of positives varied from 50 to 100" could also be written "on the basis of the 875 cases analyzed the number of positives varied from 6 to 11 per cent." In the light of the methods used, this is not an enormous difference. A group of pathologists with tissue sections or of internists with electrocardiograms would probably show a far greater degree of variation in interpretation. Chest surveys start out as a mass examination procedure but always end up as an individual attempt to reach a medical conclusion from a piece of film—obviously a difficult task except in the presence of well advanced disease. The authors believe that the size of the film used in the survey is relatively unimportant; it is being used merely to select the cases requiring further study. However, the size of the film used in that "further study" is of importance, since it is obvious that the larger the film the better the chance of recording minute or early lesions. Hence, while survey roentgenography of healthy adults can be carried out efficiently with minifilms, clinical diagnostic roentgenography of sick persons requires full size films. All tuberculosis case finding methods are apt to have serious social reverberations if adequate means for treating the case discovered are not planned prior to the survey. Open pulmonary tuberculosis is the prime target in surveys; it is found in about 1 out of every 500 adults in the general population. Being discovered, do we insist on isolation? Often no. Indeed, many persons with positive sputums are still allowed to discharge themselves intermittently from hospitals and sanatoriums. Hence, let us not exhaust our energies on surveys—at least, not until we have adequate treatment arrangements and enforceable isolation regulations.

DR. E. R. LONG, Philadelphia: This report takes some of the sting out of the army mistakes that were made in the diagnosis of tuberculosis. In discussing this question with certain physicians who have asked how many errors the army made at induction stations I have said I thought the error was about 10 per cent in each direction, that is, we excluded 10 per cent that should not have been rejected and made at least a 10 per cent error in the other direction by taking into the army numerous men who should not have been accepted. Dr. Yerushalmy of the U. S. Public Health Service quite properly said, in the light of the study here under discussion, "Ten per cent of what?" I used to think there was at least a theoretical standard of perfection. I remember one occasion when I sat in an induction station reading films with a roentgenologist who was considered one of the top men in the town. There were five 4 by 5 inch films that I had read as showing significant tuberculosis, all of which he had passed as negative. I asked him if we could have 14 by 17 repeats made, and we did. He looked at all the films, saw the shadows that seemed significant to me and made what seemed to me at that time an astonishing remark: "Well, if you want me to read them that way, I will." I am reminded of a statement by my teacher in pathology, H. Gideon Wells, a very wise man with as much experience as any one in this country in the pathology of tumors. He had devoted much of his life to the study, and once, on returning from a meeting with some of the most distinguished investigators, he summarized the discussion for me by saying "The diagnosis of tumors is a matter of taste."

Dr. James M. Flynn, Rochester, N. Y.: May I ask Dr. Chamberlain whether in the reports or interpretations made by these five men the interpretations were short or long? After reading a long report, with no conclusion, you don't know what the man is talking about. He is talking about all sorts of shadows and gives you no conclusions as to whether you are dealing with tuberculosis, virus disease or just some fibrosis that may be occupational. I am anxious to know whether the reports were short or long and to the point, as far as these five interpreters are concerned. There is a great deal of confusion among men today who are sending work to roentgenologists, and I am talking about the referring physician who, after he gets the report, doesn't know what he is dealing with. I should like to know whether these five interpreters made such type reports, and whether when you got through you knew what they were talking about.

Dr. W. Edward Chamberlain, Philadelphia: Dr. Flynn, the statisticians are wonderful people, but they would not be able to work with the kind of report you referred to. We had to school ourselves in being very much to the point. Dr. Garland felt there were too many subclassifications. We have one great advantage in this kind of approach, and that is that we can go ahead and make too many pockets in which we classify these cases. Then the statistician can throw them in together. He can say that pockets 1-a and 2-b and 2-c can be put into one with his tabulating machine. He can set the machine a different way and can run the cards through again, and out comes the answer according to a fewer number of pockets. A great deal of effort went into getting the opinions of these five readers into a form so they could have a great deal of meaning for the statistician; so I don't think we have to plead guilty to having written reports that were misunderstood. Our misunderstandings were of a different order. When we said in our tables "positive for tuberculosis" we did not say it in the sense in which Dr. Garland took it. Unfortunately we had to use a little shorthand. After one has said twenty times "There are some shadows here which one might presume could be due to the tubercle bacillus," then one puts a plus mark in a certain box. That is really what we were doing. We don't say these are tuberculosis. We know some of them were other diseases, but we were simply talking about x-ray shadows. We were trying to compare 35 mm. films with 4 by 10s, with 14 by 17 papers and 14 by 17 celluloids. We think we set up a method by which we can compare those four from the standpoint of case findings, not from the standpoint of resolving power. Dr. Morgan and Dr. Hilleboe have reported that. Concerning that 52 per cent of disagreement among two experienced men, let me point out that it depends on how much detail one goes into in one's interpretation, as to how much disagreement one gets. These men were trying to decide whether a tuberculosis was exudative or fibrocaseous or something else. One will get that disagreement if one tries to decide too many things from a roentgenogram which can't be decided from a roentgenogram. If we try to make a bacteriologic diagnosis from x-ray film we are going to get into trouble. We always do—at least a certain number of times. We are right a certain percentage of the time, and we are also wrong a certain percentage of the time.

Approach to Research.—Scientific observation is not merely the recording of facts; a photographic plate records facts but does not make observations. True observation requires objective accuracy, but it also demands selective discrimination. The scientific observer must observe not only what his senses present to him, aided or unaided by instruments; he must constantly appraise the observations as to correctness and applicability. Facts are not isolated but have numberless connections that extend into infinity. To attempt to observe all of these hides the essential in a dense cloud of the unessential. The investigator discriminates and selects what is pertinent to the particular problem that he wishes to explore.—Sollmann, Torald: Medical Research, Philadelphia, J. B. Lippincott Company, 1946.

UROLOGIC COMPLICATIONS IN INJURY OF THE SPINAL CORD

LIEUTENANT COMMANDER H. CAREY BUMPUS JR. (MC), U.S.N.R.
LIEUTENANT COMMANDER MYRON H. NOURSE (MC), U.S.N.
and
COMMANDER GERSHOM J. THOMPSON (MC), U.S.N.R.

The problems related to the treatment of patients who have received injuries to their spinal cords have always interested physicians. During and after World War I, substantial contributions were made to the knowledge of this subject by Head and Riddoch,[1] Riddoch,[2] Fearnsides [3] and Plaggemeyer.[4] More recently Munro [5] has written extensively on the subject, while Petroff [6] and his associates and Kuhn [7] have reported on the treatment of paraplegic patients in the United States Army hospitals.

Improved methods of rapid transportation following injury and advances in chemotherapy resulting in the advent of the sulfonamide drugs followed by the still more efficient antibiotics, penicillin and streptomycin, together with the more efficient and general use of blood and plasma transfusions, have resulted in the survival of many who formerly would have died a few hours after their injury or, if they survived, would have succumbed to infection a few months later. Because of this increase in the number of survivors, methods of treating the multiple complications of injuries of the spinal cord such as hemothorax, decubitus ulcerations, compound fractures, urinary retention, infection, formation of stone and spasticity with massive muscle reflexes, to mention only a few, have all received greater attention, with more efficient treatment resulting.

From the foregoing list of the commoner complications, one can appreciate that the urologist's part in the treatment of these patients, while of major importance, is no greater than that of many of his associates, especially the neurosurgeons, orthopedic surgeons and officers in charge of physical therapy. This report deals with the urologic complications observed in 101 cases of injury or disease of the spinal cord occurring among United States Navy personnel.

A few of the patients were under observation only a short time prior to their detachment from the service or transfer. The majority, however, are still under observation and treatment by one of us (M. H. Nourse). Included in this series for completeness are 5 cases previously reported.[8]

The most frequent urologic complication of injury of the spinal cord is the so-called cord bladder. In 56

Read before the Section on Urology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

This article has been released for publication by the Division of Publications of the Bureau of Medicine and Surgery of the United States Navy. The opinions and views set forth in this article are those of the authors and are not to be considered as reflecting the policies of the Navy Department.

[1] Head, H., and Riddoch, G.: The Automatic Bladder, Excessive Sweating and Some Other Reflex Conditions, in Gross Injuries of the Spinal Cord, Brain **40:** 188-263, 1917.

[2] Riddoch, G.: The Reflex Functions of the Completely Divided Spinal Cord in Man, Compared with Those Associated with Less Severe Lesions, Brain **40:** 264-402, 1917.

[3] Fearnsides, E. G.: The Innervation of the Bladder and Urethra: A Review, Brain **40:** 149-187, 1917.

[4] Plaggemeyer, H. W.: Shell Fractures of the Spine, with Observations on Kidney and Bladder Function, J. A. M. A. **73:** 1599-1604 (Nov. 22) 1919.

[5] Munro, D.: The Rehabilitation of Patients Totally Paralyzed Below the Waist, with Special Reference to Making Them Ambulatory and Capable of Earning Their Living: I. Anterior Rhizotomy for Spastic Paraplegia, New England J. Med. **233:** 453-461 (Oct. 18) 1945; Clinics **4:** 448-474, 1945.

[6] Petroff, B. P.: The Paralyzed Patient: Urologic Aspects, J. A. M. A. **129:** 154-155 (Sept. 8) 1945.

[7] Kuhn, W. G., Jr.: Personal communication to the authors.

[8] Thompson, G. J.: Cord Bladder: Restoration of Function by Transurethral Operation, U. S. Nav. M. Bull. **45:** 207-214 (Aug.) 1945.

of the patients this vesical dysfunction followed gunshot or shrapnel wounds received at Saipan, Iwo Jima or Okinawa. In 34 it resulted from fractures of the spinal column incident to the hazards of service such as airplane accidents, falls down hatches and smashing up in jeeps. Among 11 other patients, the vesical paralysis was the result of tumors of the spinal cord in 2, followed inflammatory disease in 5, developed insidiously after eighteen months in a Japanese concentration camp in 1 (probably from a dietary deficiency), was associated with myelodysplasia in 1 and a protruding intervertebral disk in another and was the aftermath of spinal anesthesia in 1.

The height of the lesion in the cord has a distinct bearing on the urologic complications. Lesions above the conus medullaris, in which physiologists and neurologists place the mechanism of the bladder reflex and which anatomists place close to the eleventh and twelfth thoracic vertebrae, involve the pathways of inhibitory impulses from the higher centers. Injuries which occur at the conus or below, in the cauda equina, do not interfere with these inhibitory tracts but damage only the reflex arc.

Perhaps of more importance than the level of the lesion is whether it is complete or incomplete. The sparing of nerve tracts and late recovery of the ability to transmit impulses account for unpredictable improvement in many cases.

In temporary block or shock of the spinal cord, vesical function returns to normal within a few weeks. Such cases are exceptional, and none are included in this study. In our series, after many weeks and, in some cases, months of convalescence, in several patients vesical function became comparatively normal, but in the great majority only two types of neurogenic vesical dysfunction were demonstrable. There was either an automatic or a reflex type of bladder, in which the lesion was as a rule above the tenth thoracic vertebra, or a retention bladder with overflow incontinence, in which the injury was usually below the tenth thoracic vertebra and generally involved the cauda equina.

The type of dysfunction following lesions low in the spinal column that usually involve the cauda equina is the most responsive to transurethral resection. Examinations through the cystoscope show various degrees of relaxation of the neck of the bladder. In some there is a constriction in the region of the internal urethral orifice so that the bladder and dilated prostatic urethra have an hourglass appearance. In other cases, a bar type of deformity and in others an appearance like that of the vocal cords is seen.

In all cases the vesical wall is trabeculated. This is an evidence of hypertrophy that can develop only as a result of increased work in the efforts of the bladder to empty, as happens in the case of urinary obstruction following prostatic hypertrophy. In this series of cases, however, the prostate can definitely be excluded as the cause of the obstruction and trabeculation, for only 3 of the patients were more than 40 years of age, 14 were in their thirties, 61 in their twenties and 23 in their teens.

In these young patients tissue is resected from the entire circumference of the vesical neck, enough being removed to make a definite funnel of the prostatic urethra, postoperative retention depending, as after prostatectomy, on the external sphincter. To do this requires the removal of but a small amount of tissue. If the first resection does not produce the desired effect, multiple operations are indicated, although the total amount of tissue excised seldom exceeds 10 Gm. In 16 cases of our series multiple resections were employed.

Of 39 patients whose injury was at or below the level of the eleventh thoracic vertebra and for whom transurethral resection was performed, 36 now have voluntary urination. They can empty the bladder completely by straining, they sleep through the night without voiding and they have no incontinence. All these patients can tell when the bladder is full, although the sensation which they feel is not normal. They describe it as a dull ache or heavy feeling in the lower part of the abdomen. Unusually large vesical capacity is present in some cases. One patient passed 925 cc. at one voiding. Two patients void automatically. Another, whose lesion involved the twelfth thoracic vertebra, fails to void after three transurethral resections. The bullet which injured his cord also injured his right kidney, which was removed transabdominally. As a result he has extremely weak muscles on the right side of his abdomen and cannot exert the abdominal pressure that is necessary to void. Intact abdominal muscles are a great help in the act of urination in paraplegic patients as well as in normal persons. The vesical neck of this patient, on being examined through the cystoscope, appeared wide open, and yet no urine can pass, even with extreme manual pressure. He has been taught to catheterize himself and has no incontinence even when he permits as much as 1,000 cc. of urine to accumulate.

Transurethral resection has been of much benefit, although not so spectacular, in patients having lesions high in the spinal column in whom an automatic or reflex bladder has been established but one which is inefficient in that it does not empty completely. Thus reflex stimulation might occur when the bladder contains 400 cc. and voiding takes place. If, however, 200 cc. of residual urine remains after voiding, one must class this as an inefficient type of automatic bladder. The patient is deprived of the full reservoir function of his bladder. If, in some way, the bladder can be made to empty completely, the interval of time between reflex urinations can be doubled. In 19 of these patients transurethral resection has diminished or entirely abolished the amount of residual urine, and, in cases in which previously it had been impossible to free the urine of infection, now in almost all these cases the urine has become crystal clear and finally sterile.

Such operations have never produced incontinence. To the contrary, they tend to relieve it, for, given longer intervals between automatic voiding, many of these patients have acquired an uncanny ability to time the emptying of the bladder and seldom soil themselves. In 14 of these patients with efficient automatic bladder, voiding occurs at three to four hour intervals, depending on fluid intake. If they do not drink too much in the evening they go through the night perfectly dry. Catheterization of these patients after voiding shows no residual. The patients with lesions of the cauda equina who do not have reflex type of urination practically never suffer any leakage unless they strain too hard when exercising or working, when urine may be forced from the bladder.

Of equal importance with vesical dysfunction as a complication of injury of the spinal cord is the incidence of infection in both the urinary and the genital tract. The type of drainage that is employed is the determining factor of its incidence. Until such time as the bladder has recovered whatever emptying and retaining function it is going to regain after the initial injury, the question experience as any one in this country in the pathology of tumors. He had devoted much of his life to the study, and once, on returning from a meeting with some of the most distinguished investigators, he summarized the discussion for me by saying "The diagnosis of tumors is a matter of taste."

Dr. James M. Flynn, Rochester, N. Y.: May I ask Dr. Chamberlain whether in the reports or interpretations made by these five men the interpretations were short or long? After reading a long report, with no conclusion, you don't know what the man is talking about. He is talking about all sorts of shadows and gives you no conclusions as to whether you are dealing with tuberculosis, virus disease or just some fibrosis that may be occupational. I am anxious to know whether the reports were short or long and to the point, as far as these five interpreters are concerned. There is a great deal of confusion among men today who are sending work to roentgenologists, and I am talking about the referring physician who, after he gets the report, doesn't know what he is dealing with. I should like to know whether these five interpreters made such type reports, and whether when you got through you knew what they were talking about.

Dr. W. Edward Chamberlain, Philadelphia: Dr. Flynn, the statisticians are wonderful people, but they would not be able to work with the kind of report you referred to. We had to school ourselves in being very much to the point. Dr. Garland felt there were too many subclassifications. We have one great advantage in this kind of approach, and that is that we can go ahead and make too many pockets in which we classify these cases. Then the statistician can throw them in together. He can say that pockets 1-a and 2-b and 2-c can be put into one with his tabulating machine. He can set the machine a different way and can run the cards through again, and out comes the answer according to a fewer number of pockets. A great deal of effort went into getting the opinions of these five readers into a form so they could have a great deal of meaning for the statistician; so I don't think we have to plead guilty to having written reports that were misunderstood. Our misunderstandings were of a different order. When we said in our tables "positive for tuberculosis" we did not say it in the sense in which Dr. Garland took it. Unfortunately we had to use a little shorthand. After one has said twenty times "There are some shadows here which one might presume could be due to the tubercle bacillus," then one puts a plus mark in a certain box. That is really what we were doing. We don't say these are tuberculosis. We know some of them were other diseases, but we were simply talking about x-ray shadows. We were trying to compare 35 mm. films with 4 by 10s, with 14 by 17 papers and 14 by 17 celluloids. We think we set up a method by which we can compare those four from the standpoint of case findings, not from the standpoint of resolving power. Dr. Morgan and Dr. Hilleboe have reported that. Concerning that 52 per cent of disagreement among two experienced men, let me point out that it depends on how much detail one goes into in one's interpretation, as to how much disagreement one gets. These men were trying to decide whether a tuberculosis was exudative or fibrocaseous or something else. One will get that disagreement if one tries to decide too many things from a roentgenogram which can't be decided from a roentgenogram. If we try to make a bacteriologic diagnosis from x-ray film we are going to get into trouble. We always do—at least a certain number of times. We are right a certain percentage of the time, and we are also wrong a certain percentage of the time.

Approach to Research.—Scientific observation is not merely the recording of facts; a photographic plate records facts but does not make observations. True observation requires objective accuracy, but it also demands selective discrimination. The scientific observer must observe not only what his senses present to him, aided or unaided by instruments; he must constantly appraise the observations as to correctness and applicability. Facts are not isolated but have numberless connections that extend into infinity. To attempt to observe all of these hides the essential in a dense cloud of the unessential. The investigator discriminates and selects what is pertinent to the particular problem that he wishes to explore.—Sollmann, Torald: Medical Research, Philadelphia, J. B. Lippincott Company, 1946.

UROLOGIC COMPLICATIONS IN INJURY OF THE SPINAL CORD

LIEUTENANT COMMANDER H. CAREY BUMPUS JR. (MC), U.S.N.R.
LIEUTENANT COMMANDER MYRON H. NOURSE (MC), U.S.N.
and
COMMANDER GERSHOM J. THOMPSON (MC), U.S.N.R.

The problems related to the treatment of patients who have received injuries to their spinal cords have always interested physicians. During and after World War I, substantial contributions were made to the knowledge of this subject by Head and Riddoch,[1] Riddoch,[2] Fearnsides [3] and Plaggemeyer.[4] More recently Munro [5] has written extensively on the subject, while Petroff [6] and his associates and Kuhn [7] have reported on the treatment of paraplegic patients in the United States Army hospitals.

Improved methods of rapid transportation following injury and advances in chemotherapy resulting in the advent of the sulfonamide drugs followed by the still more efficient antibiotics, penicillin and streptomycin, together with the more efficient and general use of blood and plasma transfusions, have resulted in the survival of many who formerly would have died a few hours after their injury or, if they survived, would have succumbed to infection a few months later. Because of this increase in the number of survivors, methods of treating the multiple complications of injuries of the spinal cord such as hemothorax, decubitus ulcerations, compound fractures, urinary retention, infection, formation of stone and spasticity with massive muscle reflexes, to mention only a few, have all received greater attention, with more efficient treatment resulting.

From the foregoing list of the commoner complications, one can appreciate that the urologist's part in the treatment of these patients, while of major importance, is no greater than that of many of his associates, especially the neurosurgeons, orthopedic surgeons and officers in charge of physical therapy. This report deals with the urologic complications observed in 101 cases of injury or disease of the spinal cord occurring among United States Navy personnel.

A few of the patients were under observation only a short time prior to their detachment from the service or transfer. The majority, however, are still under observation and treatment by one of us (M. H. Nourse). Included in this series for completeness are 5 cases previously reported.[8]

The most frequent urologic complication of injury of the spinal cord is the so-called cord bladder. In 56

Read before the Section on Urology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

This article has been released for publication by the Division of Publications of the Bureau of Medicine and Surgery of the United States Navy. The opinions and views set forth in this article are those of the authors and are not to be considered as reflecting the policies of the Navy Department.

1. Head, H., and Riddoch, G.: The Automatic Bladder, Excessive Sweating and Some Other Reflex Conditions, in Gross Injuries of the Spinal Cord, Brain **40:** *188-263, 1917.*

2. Riddoch, G.: The Reflex Functions of the Completely Divided Spinal Cord in Man, Compared with Those Associated with Less Severe Lesions, Brain **40:** *264-402,* 1917.

3. Fearnsides, E. G.: The Innervation of the Bladder and Urethra: A Review, Brain **40:** 149-187, 1917.

4. Plaggemeyer, H. W.: Shell Fractures of the Spine, with Observations on Kidney and Bladder Function, J. A. M. A. **73:** 1599-1604 (Nov. 22) 1919.

5. Munro, D.: The Rehabilitation of Patients Totally Paralyzed Below the Waist, with Special Reference to Making Them Ambulatory and Capable of Earning Their Living: I. Anterior Rhizotomy for Spastic Paraplegia, New England J. Med. **233:** 453-461 (Oct. 18) 1945; Clinics **4:** 448-474, 1945.

6. Petroff, B. P.: The Paralyzed Patient: Urologic Aspects, J. A. M. A. **129:** 154-155 (Sept. 8) 1945.

7. Kuhn, W. G., Jr.: Personal communication to the authors.

8. Thompson, G. J.: Cord Bladder: Restoration of Function by Transurethral Operation, U. S. Nav. M. Bull. **45:** 207-214 (Aug.) 1945.

of the patients this vesical dysfunction followed gunshot or shrapnel wounds received at Saipan, Iwo Jima or Okinawa. In 34 it resulted from fractures of the spinal column incident to the hazards of service such as airplane accidents, falls down hatches and smashing up in jeeps. Among 11 other patients, the vesical paralysis was the result of tumors of the spinal cord in 2, followed inflammatory disease in 5, developed insidiously after eighteen months in a Japanese concentration camp in 1 (probably from a dietary deficiency), was associated with myelodysplasia in 1 and a protruding intervertebral disk in another and was the aftermath of spinal anesthesia in 1.

The height of the lesion in the cord has a distinct bearing on the urologic complications. Lesions above the conus medullaris, in which physiologists and neurologists place the mechanism of the bladder reflex and which anatomists place close to the eleventh and twelfth thoracic vertebrae, involve the pathways of inhibitory impulses from the higher centers. Injuries which occur at the conus or below, in the cauda equina, do not interfere with these inhibitory tracts but damage only the reflex arc.

Perhaps of more importance than the level of the lesion is whether it is complete or incomplete. The sparing of nerve tracts and late recovery of the ability to transmit impulses account for unpredictable improvement in many cases.

In temporary block or shock of the spinal cord, vesical function returns to normal within a few weeks. Such cases are exceptional, and none are included in this study. In our series, after many weeks and, in some cases, months of convalescence, in several patients vesical function became comparatively normal, but in the great majority only two types of neurogenic vesical dysfunction were demonstrable. There was either an automatic or a reflex type of bladder, in which the lesion was as a rule above the tenth thoracic vertebra, or a retention bladder with overflow incontinence, in which the injury was usually below the tenth thoracic vertebra and generally involved the cauda equina.

The type of dysfunction following lesions low in the spinal column that usually involve the cauda equina is the most responsive to transurethral resection. Examinations through the cystoscope show various degrees of relaxation of the neck of the bladder. In some there is a constriction in the region of the internal urethral orifice so that the bladder and dilated prostatic urethra have an hourglass appearance. In other cases, a bar type of deformity and in others an appearance like that of the vocal cords is seen.

In all cases the vesical wall is trabeculated. This is an evidence of hypertrophy that can develop only as a result of increased work in the efforts of the bladder to empty, as happens in the case of urinary obstruction following prostatic hypertrophy. In this series of cases, however, the prostate can definitely be excluded as the cause of the obstruction and trabeculation, for only 3 of the patients were more than 40 years of age, 14 were in their thirties, 61 in their twenties and 23 in their teens.

In these young patients tissue is resected from the entire circumference of the vesical neck, enough being removed to make a definite funnel of the prostatic urethra, postoperative retention depending, as after prostatectomy, on the external sphincter. To do this requires the removal of but a small amount of tissue. If the first resection does not produce the desired effect, multiple operations are indicated, although the total amount of tissue excised seldom exceeds 10 Gm. In 16 cases of our series multiple resections were employed.

Of 39 patients whose injury was at or below the level of the eleventh thoracic vertebra and for whom transurethral resection was performed, 36 now have voluntary urination. They can empty the bladder completely by straining, they sleep through the night without voiding and they have no incontinence. All these patients can tell when the bladder is full, although the sensation which they feel is not normal. They describe it as a dull ache or heavy feeling in the lower part of the abdomen. Unusually large vesical capacity is present in some cases. One patient passed 925 cc. at one voiding. Two patients void automatically. Another, whose lesion involved the twelfth thoracic vertebra, fails to void after three transurethral resections. The bullet which injured his cord also injured his right kidney, which was removed transabdominally. As a result he has extremely weak muscles on the right side of his abdomen and cannot exert the abdominal pressure that is necessary to void. Intact abdominal muscles are a great help in the act of urination in paraplegic patients as well as in normal persons. The vesical neck of this patient, on being examined through the cystoscope, appeared wide open, and yet no urine can pass, even with extreme manual pressure. He has been taught to catheterize himself and has no incontinence even when he permits as much as 1,000 cc. of urine to accumulate.

Transurethral resection has been of much benefit, although not so spectacular, in patients having lesions high in the spinal column in whom an automatic or reflex bladder has been established but one which is inefficient in that it does not empty completely. Thus reflex stimulation might occur when the bladder contains 400 cc. and voiding takes place. If, however, 200 cc. of residual urine remains after voiding, one must class this as an inefficient type of automatic bladder. The patient is deprived of the full reservoir function of his bladder. If, in some way, the bladder can be made to empty completely, the interval of time between reflex urinations can be doubled. In 19 of these patients transurethral resection has diminished or entirely abolished the amount of residual urine, and, in cases in which previously it had been impossible to free the urine of infection, now in almost all these cases the urine has become crystal clear and finally sterile.

Such operations have never produced incontinence. To the contrary, they tend to relieve it, for, given longer intervals between automatic voiding, many of these patients have acquired an uncanny ability to time the emptying of the bladder and seldom soil themselves. In 14 of these patients with efficient automatic bladder, voiding occurs at three to four hour intervals, depending on fluid intake. If they do not drink too much in the evening they go through the night perfectly dry. Catheterization of these patients after voiding shows no residual. The patients with lesions of the cauda equina who do not have reflex type of urination practically never suffer any leakage unless they strain too hard when exercising or working, when urine may be forced from the bladder.

Of equal importance with vesical dysfunction as a complication of injury of the spinal cord is the incidence of infection in both the urinary and the genital tract. The type of drainage that is employed is the determining factor of its incidence. Until such time as the bladder has recovered whatever emptying and retaining function it is going to regain after the initial injury, the question of drainage is paramount. In only 1 case of this series could manual expression of the urine be done efficiently. In 19 cases suprapubic cystostomy was used at some stage in convalescence; in others retention was cared for by urethral catheters.

Here it is well to stress that small catheters are preferable to large ones; a no. 18 Foley bag type is ideal. Many of the patients have periodic priapism, and the Foley catheter is the only type which will stay in proper adjustment. The catheters were changed frequently and irrigated regularly. Tidal drainage was used in the majority of the cases at some time during convalescence, but it was not used in all nor was it used continuously. It was found that irrigations at least three times a day and once at night with a piston syringe kept the bladder cleaner than did tidal irrigation alone. Puddling of the infected urine and calcium debris occurred in spite of the most careful efforts to maintain efficient automatic drainage. In our experience, the avoidance of infection is a more important measure in maintaining an elastic bladder than rhythmic exercise.

In the first few weeks following injury the use of a urethral catheter, if it can be properly maintained, is the easiest method of caring for vesical drainage. Under combat conditions if nursing facilities are not adequate or in cases in which drainage will be necessary late into convalescence, suprapubic drainage is preferable, as the incidence of five periurethral abscesses, three fistulas and several cases of epididymitis among our patients suggests.

A fairly frequent compelling cause for the use of catheter drainage is spasticity, with its associated massive muscle spasms in which the thighs automatically and suddenly jerk up onto the abdomen. A urinal under these conditions is constantly being upset in the bed, and it is of little use. Such spasticity is usually associated with spasticity of the detrusor muscles, so that the use of the bladder as a reservoir is extremely limited.

To increase the capacity of the bladder and to try to overcome its spasticity, tidal drainage was used early in convalescence. Periodically the catheter was removed when the outflow limb of the device for tidal drainage had been gradually raised over a period of weeks to a level well above the bladder. Oftener than not, when the catheter was removed the patient voided automatically and with fair efficiency. This occurred most quickly in cases in which the injury was high in the spinal column, above the tenth thoracic vertebra. When there was decided general spasticity the vesical capacity rapidly diminished, and not until the spasticity was overcome did it increase or remain as great as when the tidal drainage was first discontinued.

Such spasticity is considered by some authorities to be the result of nerve irritation at the site of injury; therefore, thorough laminectomy as early as feasible seems indicated in every traumatic lesion. Laminectomy is a difficult operation to do on the beach or aboard ship, and only a few were done under these conditions. Therefore the majority of the fifty-three laminectomies performed in our series of 101 cases were done after the patients' arrivals at the base. Seeing the removal of spicules of bone, fragments of metal and pieces of uniform from the dural sac result in relief of pain, diminution of spasticity and improvement of nerve function has convinced us that the teaching that late laminectomy is of slight value is regrettable. As the risk of such an operation is slight, it is, in our opinion, a grave error to deny the patient the benefit of even the slightest gain in neural function because some have thought that a limit of time exists beyond which neural regeneration is impossible and neurosurgical intervention is fruitless.

Hypercalcinuria inevitably ensues when prolonged recumbency is required. How rapid the transfer of calcium from the skeleton to the urine is can be appreciated only by the viewing of roentgenograms that are taken at regular intervals and watching of the patient's urine, which becomes clouded with calcium debris, mucus and pus. Keeping this mass from coalescing in the urinary tract to form stones becomes one of the major problems in the care of these patients, and the removal of stones, once they have formed, becomes an important task.

Removal of stones from the bladder is not difficult, especially if the patients who have residual urine are examined at regular intervals. Small vesical stones will be detected early in their formation and can be washed out through the cystoscope. In 67 of our cases they developed.

To prevent this formation of stones in the bladder and kidney, a daily intake of 4,000 cc. was forced in order to keep the urinary salts in as great dilution as possible. The ingestion of large amounts of either milk or fruit juices was discouraged. All our patients were encouraged to get out in the sun and acquire a deep tan. There was no indication that this increased formation of stones.

Patients who have lesions high in the spinal cord do not suffer with renal colic, and the only evidence of a stone passing down the ureter may be high temperature. Therefore the habit of making excretory urograms periodically was established. Any indication of obstruction of the upper part of the urinary tract was met by immediate ureteral catheterization. In 11 cases stones were found in one kidney and in 8 cases in both kidneys, and in some of these cases stones were also present in the ureters.

In the conclusion of a report on complications following injuries of the spinal cord, it would seem fitting to summarize the present status of this group of 101 patients. Two have died, but in neither case did the death follow surgical treatment; in 1 case the death was sudden and unexplained; the other death, which occurred three hundred and sixty-nine days after injury, was the result of multiple decubitus ulcers. Fifty-eight patients have undergone transurethral resection; in 57 cases the results of operation were successful, but in 1 case the result was a total failure. Only 6 patients are now dependent on catheters; the other 93 can pass their urine without mechanical assistance of any kind. Of this number, 53 have a voluntary type of urination, while in 40 it is automatic. In 85 cases the urine is grossly clean, and in 39 cases cultures have been sterile.

ABSTRACT OF DISCUSSION

Dr. Miley B. Wesson, San Francisco: This paper is unusual from a number of standpoints. First, it calls attention to the fact that it requires a war to furnish the material for an authentic paper on neurogenic bladder. Second, the subject is not going to be thoroughly clarified until more work is done in the underlying basic sciences—anatomy and physiology. And, third, intelligently riding a hobby may result in an epoch-making discovery. Sir John Thompson-Walker advocated suprapubic cystotomy for neurogenic bladder in his Hunterian lecture in 1917. His paper was based wholly on theory, and he told me in Budapest in 1936 that he was much disappointed in the clinical results. Following World War I, men with cord bladders were concentrated at Walter Reed Hospital and there were studied by Plaggemeyer and Cummings. They found that the best results were obtained by following

Hugh H. Young's orders to the urologists of the American Expeditionary Forces—to leave the uninfected bladders alone, and they would empty spontaneously. Over twenty-five years ago, Dr. Young started me on so-called three weeks' study of the vesical trigone, and I worked three years on the embryology, anatomy, physiology and pharmacology of the bladder neck. Our knowledge of the physiology is still sketchy and more or less inaccurate. In 1921, Corbus and O'Conor published a beautiful paper on neurogenic bladders, in which the retention was due to a median bar or hypertrophied trigone. Unfortunately, Young's punch had not then been wired for electricity so as to control hemorrhages, and no operation was done. Now, after World War II, our essayists, whose surgical hobby is the use of the modernized Young punch, are successfully treating such patients. If Dr. Young were here, I believe that he would approve of our essayists' operation, because it is scientifically sound, being merely the weakening of a sclerotic internal sphincter so that the trigone muscle can pull it open.

Dr. Willet F. Whitmore, New York: My familiarity with the problem is based on a year of recent experience at the Bronx Veterans Administration Hospital, in New York. During that period, 90 paraplegic patients came under my observation. The goal of rehabilitation of patients with urologic disorders is to establish some form of socially manageable urethral voiding which will efficiently empty the bladder of sterile or at least grossly clear urine and, at the same time, minimize the occurrence of urinary infection and its complications. Following urologic investigation the first step is the closure of the urinary fistulas. Two to four weeks after the fistula had closed, the patient is placed on tidal irrigation for an arbitrary period of from two to six months. Less than 10 per cent of our patients showed any increase in capacity of the bladder or any change in bladder function, as evidenced by the cystometric study, during this period of tidal irrigation. At the end of this time, the urethral catheter is removed and the success or failure of voiding observed. The cystometric study rarely permits an accurate appraisal of what is going to happen when the catheter is removed. In 90 patients there were 2 deaths, neither from disorders of the urinary tract. Of the remaining 88 patients, 71 are voiding, 11 have urethral catheters and 6 have suprapubic cystostomies. Of the 71 patients who are voiding, 36 have a satisfactory result and 35 still present problems for one reason or another; 13 patients have had transurethral resections, with good results in 9 instances.

Dr. Grayson Carroll, St. Louis: This presentation of treatment of urologic complications in injuries of the spinal cord is a valuable contribution to the care of patients with these difficult conditions. My colleagues and I have carried out this procedure in a number of selected cases and have been gratified with the results obtained. I should like to ask Dr. Nourse what is the cause of the obstruction at the bladder neck. Dr. Emmett has ventured the opinion that it is hypertrophic tissue caused by the multiple efforts at voiding. He has seen cases in which evidence of back pressure was noted, such as coarse trabeculations, and has demonstrated the presence of hypertrophic tissue by pathologic examination of the tissue removed. In some 30 cases of spinal injury studied at the Veterans Hospital in St. Louis, we were surprised to find that so many of the urethrocystograms showed a widening at the bladder neck, giving a funnel-shaped picture which pointed to the internal sphincter but wide at the internal sphincter. This gave the impression that the internal sphincter was broader than normal and therefore required no resection. I should like to ask Dr. Thompson or Dr. Nourse whether their urethrocystograms gave the same picture.

Lieutenant Commander Myron H. Nourse (MC), U. S. N.: Dr. Carroll, in regard to what it is that causes the hypertrophy, from our experience it seems to be an effort of the bladder to empty itself against an obstructed bladder neck. The demonstration of the obstruction is seen with a McCarthy panendoscope with a small sheath. Many of these cannot be seen unless the bladder is distended with water. As the bladder distends, the contraction ring about the area of the internal ureteral orifice can be seen to contract. In many of them it appears just as an iris diaphragm. The tissue that is resected microscopically is shown to be hypertrophied muscle tissue. The resection includes the entire bladder neck to the verumontanum and sometimes distal. Many times we find that tissue taken distal to the verumontanum seems to be as obstructive as the rest. It is a complete conization, just as is shown on the cystograms and on the slides. All hypertrophied muscle tissue and necrotic inflammatory tissue is removed.

PSYCHIC FACTORS IN THE DEVELOPMENT AND TREATMENT OF OBESITY

S. CHARLES FREED, M.D.
San Francisco

While there might be doubt as to the shortening of life by such factors as smoking, tobacco, alcohol and exercise, there is unanimous agreement of all authorities that overweight has a decided effect on decreasing the span of life. Statistics overwhelmingly show that overweight not only results in increased death rate but is also responsible for the earlier development of cardiovascular-renal diseases, diabetes and even cancer. It is, therefore, surprising that with this knowledge the members of the medical profession have been so lightly interested in a concerted and sincere effort to treat obesity or to prevent its occurrence. Heroic measures which involve tremendous expense, labor and time have been expended in the prevention and treatment of infectious diseases, nutritional disturbances and cancer, and great publicity has been given to such efforts. The common cold also has received widespread attention in newspapers, magazines and medical publications because of the economic factors involved in the loss of work hours. In contrast, overweight is discussed only occasionally, and education of the public in this regard is sadly neglected, although the prevention or treatment of obesity has a far greater benefit in increasing the life span and combating degenerative changes than that of practically any other disease or dysfunction.

For many decades physicians have been taught that obesity is a glandular or metabolic disturbance; that the obese person therefore differs from the one of normal weight in regard to his "glandular balance" or his fat or carbohydrate metabolism, and various theories have been proposed to account for one person being heavier than another. These theories have all been effectively refuted by Newburgh[1] and others[2] who, in thorough investigations, have been unable to find in the great majority of obese persons any alterations in endocrine or metabolic behavior from normal. The conclusion is warranted that overweight is simply due to a positive caloric balance and that these persons eat more food than they expend in the form of energy. It is true, however, that one person will have a positive caloric balance on a diet of 1,500 calories and another will have a negative balance, so that one will gain weight and the other will lose weight. Human machines, like other machines, may differ in efficiency, and the

---

Read before the Society for the Study of Internal Secretions in San Francisco, June 29, 1946.

[1] Newburgh, L. H.: Obesity; Energy Metabolism, Physiol. Rev. **24**: 18 (Jan.) 1944.

[2] (*a*) Conn, J. W.: Obesity; Etiological Aspects, Physiol. Rev. **24**: 31 (Jan.) 1944. (*b*) Freed, S. C.: Obesity, in Greenhill, J. P.: Office Gynecology, ed. 4, revised, Chicago, The Year Book Publishers, Inc., 1945, p. 406; Modern Concepts of Obesity, Illinois M. J. **77**: 282 (March) 1940. (*c*) Bruch, H.: Obesity in Childhood and Endocrine Treatment, J. Pediat. **18**: 36 (Jan.) 1941.

metabolically efficient human body will gain weight on the same intake of food on which the inefficient one will lose weight. This efficiency is directly related to the nervous system of the body and involves, in various persons, the ability to relax and be completely at rest, the performance of wasteful movements, muscular tensions and intensity of activity. Every one knows persons who can never sit still and are constantly in motion and others who have the ability to remain motionless for long periods of time. It is obvious that the energy expenditure of two such persons will differ greatly and thus account for the loss of weight in one and the gain of weight in the other, even though they partake of similar diets.

Thus it is readily recognized that the personality of a subject will control to varying extents the expenditure of energy. It is also being increasingly recognized that personality will likewise influence the intake of food. Psychiatrists have long known that eating is an emotional outlet and may be under the influence of the subconscious mind. This article is therefore an attempt to bring to physicians, who are often called on to treat obesity, the usual psychic factors which control the patient's appetite or render him unable to check the urge to eat in order to maintain weight. It is not intended to completely review these psychic factors, which is the task of the psychiatrist, but this brings to the attention of the general physician the existence of such influences, many of which can be controlled without formal psychotherapy, and demonstrates how these patients can be treated from this point of view in a far more successful way than has been accomplished on the so-called "glandular" basis.

FACTORS IN OVEREATING

There are a variety of psychologic factors which intensify the appetite for food. Many of these are unconscious, while others are recognized by the patients and can be controlled by them. Where the urge to eat is dependent on unconscious tensions, it is difficult for the patient to restrict the intake of food. Some of these unconscious drives are so powerful that no incentive for weight reduction, not excepting the threat of early death, can induce the patient to refrain from overeating. Not uncommonly a patient will say "I would rather die than starve." This attitude is much the same as that of the repentant alcoholic addict who realizes that he is a social disgrace but can do little to control his appetite for alcohol. The tobacco habit is similarly controlled with difficulty, even though a patient may be advised that it is injurious to his health.

In general, it may be said that anything which increases the emotional tonus, such as sorrow, nervousness, irritability, anxiety or an emotional upset, will further the desire for food and cause an increase in weight in many persons who have a tendency to be obese. This is shown by the following data. Five hundred consecutive patients who requested treatment for their overweight were asked the question "When you are nervous or worried do you eat more or less?" Three hundred and seventy answered that they either ate larger meals or ate more frequently, 95 of the remaining 130 answered that they did not believe that they ate more when nervous or worried but that they did eat more when they were idle, bored or tired. The remainder claimed that their appetites were always good, or that they just enjoyed food.

It is obviously impossible for all overweight patients to consult psychiatrists regarding fundamental causes of the drive or craving for food beyond normal amounts. A great majority of patients may be helped however by the physician who attempts to understand the reasons for their overeating. It is surprising to find that many superficial conditions may be the inciting factors in the urge to eat excessively. Furthermore, it will be shown that whatever glandular factor may be responsible for overeating work not by direct biochemical action on the metabolism of fat but by increasing nervous tension. The following conditions, many of which are capable of being treated by the general physician, have been found to result in overeating.

1. *Environment.*—The child who is brought up in a family where it is common to have large, rich meals will imitate the habits of those around him by eating an excessive amount of food. Such cases are found in families in which all members are overweight. People who are entertaining or are being entertained to a great extent, such as businessmen who conduct their affairs over the dinner table, are constantly exposed to rich foods and are influenced by suggestion to overeat.

2. *Economics.*—In impoverished homes food is a prominent feature in the daily life of a person because of the relative insecurity of the supply of food from day to day. The importance of sustenance creates an aggressiveness toward food, which results in eating all that is available (usually the inexpensive, high caloric types of food). Children are also impressed with the competition for food and the necessity for seizing all that is possible as well as with the importance of not wasting or leaving any. These habits may persist even after wealth is obtained.

3. *Monotony.*—Where there is a lack of interests or distractions escape is sought in eating. This occurs in housewives who break the daily routine by frequent feeding. It is also seen in such persons as traveling salesmen, who drive long distances and vary the monotony of their trips by stopping for food every hour or so. A great number of people overeat on weekends, when they are idle and away from the distracting influences of their work.

4. *Occupation.*—Those employed in restaurants, candy shops, delicatessen stores and the like are constantly influenced to eat by the presence of food.

5. *Organic Diseases.*—Patients who are bedridden or whose activities are restricted by a disability, such as a fracture or convalescence from a surgical operation, will probably eat according to the habits established when they were active and will thus put on weight because of the temporary decrease in their expenditure of energy. Such a condition as simple anemia, which induces fatigue, will also result in a condition of inertia and relative overeating. The tendencies here might actually be listed under the heading of monotony or nervousness, since many persons with anemia will become irritable and nervous, and the bedridden patient is also subject to monotony.

6. *Nervousness.*—In a broad sense, that which makes a patient worried or anxious, such as a social upset, domestic difficulty or illness in the family, will result

in overeating through the increase in his psychic hunger. It is not uncommon that after the death of a member of the family the others will find themselves getting heavier, much to their consternation and shame, because loss of weight is considered a classic response to such an occurrence.

7. *Glandular Imbalance.*—The glandular dysfunctions which result in overweight are hardly those which have been taught for years in medical schools, which teaching is reflected in the traditional treatment of obese patients by thyroid or injections of such preparations as pituitary extracts. In only rare cases is obesity of endocrine origin. Some glandular conditions may, however, indirectly lead to increased appetite. The two most common endocrine dysfunctions found to be responsible for overeating are the climacteric, which results in an increased nervous tension and thus leads to overeating, and premenstrual tension, which also increases tension but which occurs only for about one week before menstruation. Puberty and pregnancy are conditions which commonly precipitate overeating through the development of anxieties, fears and new drives. The administration of thyroid for the reduction of overweight is in the great majority of cases without an adequate scientific basis. Many patients may actually gain weight on thyroid therapy because their appetite becomes greater as the result of increased nervous tension induced by the medicament.

8. *Subconscious Factors.*—Among subconscious factors there is a variety of patterns which may result in overweight. Frustrations, overcompensations and lack of emotional satisfaction are commonly associated with overeating. Often patients, especially women, will escape from social competition or responsibility by "retreating behind the wall of obesity." This group probably requires psychotherapy of a fundamental type in order to release the patient from the drive to eat. In this type of patient there is probably, as many psychiatrists believe, a regression toward the infantile state with an increased drive for oral satisfaction by appeasing the suckling instinct. This same drive is probably present to greater or lesser degrees in most patients with a tendency to overeat but becomes extreme and uncompensated in some of them.

The above classification is not intended as a formal or accurate analysis of those psychic factors which tend to prevent the patient from maintaining his proper weight. There is considerable overlapping and interrelationship of the various groups. The separation into these different headings is an arbitrary but practical one from the point of view of treatment by the general practitioner.

It is not considered that these factors are specific causes for overeating but simply that they influence the release of nervous energy into the channel of overeating in those persons who tend in that direction. The same psychic factors will produce in other subjects various types of psychosomatic disorders, such as colitis, gastric ulcers and neurogenic dermatoses. The fundamental reasons why persons have a tendency to overeat has been extensively discussed by psychiatrists and others.[3] A large percentage of obese persons had a delayed emotional maturity, as shown by the fact that as children enuresis occurred in 40 per cent. Such children also had an extremely poor sense of self expression and sought entertainment in passive pleasures, such as music and radio. Often this was due to overprotection of the child by the parent. Thus, the tendency of the children to inactivity brought on their overeating, rather than the obesity producing inactivity. Many children had parents who were in constant conflict with open hostility, although often there was a compensating violent display of affection and concern. In many, however, overeating did not appear until adulthood, when responsibilities and insecurity brought out these latent characteristics developed in childhood.

TREATMENT

The treatment of obesity involves the understanding of the patient from a physical as well as a psychologic point of view. A complete examination of the patient should be made in order to determine any organic change which might cause increased irritability or nervous tension. Such conditions as simple anemia, arthritis, premenstrual tension, menopause and postoperative asthenia may all result in relative overeating, and treatment should be instituted in accordance with the disturbance. If the nervous irritability is of a temporary nature, such as, for example, the worry over a child's illness, unpleasantness at work or a domestic rift, sedation with a barbiturate compound is helpful. Where the emotional tension is due to a deeper and stronger influence the patients should be studied in accordance with their background, upbringing and present family relationship in an effort to determine the cause for the increased desire for food from a psychologic point of view. The physician can often determine the cause and explain to the patients the actual reasons for their excessive desire for food, thereby aiding them significantly in their efforts to combat this reaction. While such studies are being made and treatment is being instituted for the various disturbances which may be found, it is well to have these patients start immediately on their reduction diet.

The diet should be a well balanced one of 800 to 1,100 calories. The drug of choice to suppress their desire for food is amphetamine sulfate, or, as it is commercially known, Benzedrine sulfate. This compound is of inestimable value in controlling the desire for food and reducing the level of satiability to a more normal one.[4] This drug is commonly administered in dosages of 5 mg. three times a day, thirty to sixty minutes before each meal. Occasionally patients will require 10 mg. at one or more times during the day, depending on their response to the drug. Only rarely does amphetamine fail to curb the appetite, except in those whose drive for food is overpowering and who probably require fundamental psychotherapy, or in patients who resist subconsciously any suppression of the appetite because of the great pleasure derived from eating, even though they may consciously express a desire to have their appetite curbed. With the administration of amphetamine, reduction in weight may be promptly started, and while this is going on, other forms of treatment may be sought out and administered to aid in giving the patient a sense of well-being. It is this feeling of well-being which reduces the psychic tension and thus combats the increased desire for food. Thus, such forms of therapy as iron in cases of anemia, estrogens for the menopause, androgens or ammonium chloride for premenstrual tension, barbiturate drugs for nervousness and thyroid for those patients with a deficiency of this glandular substance are all most helpful. The results of reduction treatment with the use of amphetamine in combination with other medicaments as indicated are gratifying in a relatively high proportion of cases, excepting those of patients who frequently undergo emotional upsets of such a nature that there may be a return of the original tendency to overeat. Education of patients in this respect is essential, and they should be told that whenever anything occurs which induces in them worry, fear or insecurity they should return to the physician for help. When the patient is relatively unstable and obviously the victim of a severe psychic storm, it is best to have consultation and treatment with a psychiatrist for a more fundamental approach to this problem. Obviously, however, all overweight patients cannot avail themselves of this treatment, and it is up to the physician to carry as much of this load as possible for the patient suitable for mild psychotherapy.

---

[3] (*a*) Weiss, E., and English, O. S.: Psychosomatic Medicine, Philadelphia, W. B. Saunders Company, 1943, p. 335. (*b*) Bruch, H.: Obesity in Childhood and Personality *Development*, *Am J Orthopsychiat.* **11**: 467 (July) 1941. (*c*) Newburgh.[1] Freed.[2b]

[4] Rosenthal, G., and Solomon, H. A.: Benzedrine Sulfate in Obesity, Endocrinology **26**: 807 (May) 1940. *Myerson, A.: The Rationale* of Amphetamine (Benzedrine) Sulfate Therapy, Am. J. M. Sc. **199**: 729 (May) 1940.

Since amphetamine is of such a vital importance in the treatment of overweight, it is well to consider this drug for its possible harmful effects as well as its beneficial effects. There has been much publicity in the lay magazines in recent years warning the public against the harmful effects of Benzedrine. These harmful effects have been vaguely termed as overstimulation of the heart, addiction and nervous upsets. It is true that a certain type of person with chronic fatigue, who receives significant mental and physical stimulation from this drug, may find a constant need for it and thereby have an addiction to it much the same as that acquired for many other commonly used drugs. Taken properly, however, for the reduction of weight, there is little danger that addiction will occur. There appears to be little or no evidence that amphetamine induces organic damage when given in therapeutic doses. Occasionally one may encounter certain side reactions of little significance, such as dryness of the mouth, a temporary exhilaration with a sense of intoxication which may last only a few days, insomnia if the medicament is taken too late in the day and constipation. The constipation is the most serious of these conditions and may result in part from the reduction diet's low carbohydrate content, which is in itself constipating. Lubrication with liquid petrolatum and the occasional use of a saline laxative may be necessary. Warnings against amphetamine for patients with hypertension have been made by the Council on Pharmacy and Chemistry and the Food and Drug Administration. I have encountered no significant increase in the blood pressure of such patients when the amphetamine is combined with phenobarbital, 15 to 30 mg. three times a day. In 200 cases where the patient had a systolic blood pressure of 150 or more on the first visit, the use of this combination of drugs has in all cases except 4 resulted in a diminution of the blood pressure within one or two weeks. Twenty-eight of 30 persons with hypertensive systolic blood pressure of 200 or more have also responded to the treatment with a gratifying fall in blood pressure within two weeks. This feature is extremely important, because it is the overweight patients with such high blood pressures who are most urgently in need of reduction of weight, and it would be unfortunate if one was deprived of amphetamine for use in such patients for a fear of increasing the hypertension or harming the heart.

One of the most important phases of amphetamine therapy is that it will suppress appetite in practically all cases regardless of the psychic pattern for the overeating tendency, thereby reducing weight promptly and with little effort on the part of the patient in following his reduction diet. This effortlessness in reducing is of tremendous benefit to the morale of patients, since many of them fear their inability to withstand the temptation of food. Not only does the patient lose weight without the need of exerting his so-called "will power," but at the same time there is often an increased sense of well-being and a relaxation of nervous tension; the patient is highly encouraged to continue dieting for prolonged periods of time, unaccompanied by development of symptoms of irritability, weakness and cravings for food which often accompany simple reduction diet therapy. After two or more months the effect of the drug becomes more or less fixed, so that with cessation of therapy the appetite still remains sufficiently suppressed and the diet does not become difficult to follow. This effect is probably due to the spontaneous shrinking of the stomach from partial fillings, and as it shrinks sensations of hunger are of diminished intensity. This state may be maintained for relatively long periods after the cessation of therapy but may be broken by any occurrences which cause pronounced emotional upset or by a change in environment or eating habits. The patient should be cautioned in this regard and educated either to recognize this state of affairs and seek other outlets for his nervous tension or to return to the physician for further supportive treatment during such phases. The majority of patients thus treated obtain satisfactory results, and it is impossible to estimate the benefits to their health, spirits and domestic life which follow this reduction in weight. Those failures which occur are probably in patients whose fundamental psychic pattern is such that more vigorous psychotherapy will be necessary.

Use of thyroid for the reduction of weight is well worth discussing. It is used in tremendous quantities by most physicians who attempt to reduce weight, simply in deference to educational traditions. The rationale of its use is faulty, since few obese patients have a deficiency of thyroid. It is true that many such persons have a low basal metabolic rate, but if the results of the basal metabolic test are recalculated in accordance with the ideal weight of the patient rather than his total weight, it will be found that the metabolic weight is either normal or slightly elevated. The pharmacologic effect of thyroid in stimulating the combustion of fat may be effective, but often the dose approaches toxic levels.[4a] The administration of thyroid to an obese person will result in one of three responses. 1. He may lose weight, but in doing so is subject to a rapid regain because the intake of food has not been controlled adequately. 2. No effect is encountered, although the patient may take huge amounts of the drug. 3. There may actually be an increase in weight due to the development of a stronger appetite through the toxic effects of thyroid, productive of nervousness and irritability. Means [5] has repeatedly deplored the use of thyroid for reduction. In addition there is the possibility of producing significant harm in many persons, especially in the older age group where the cardiac reserve is small. Other possible harm may be in hepatic damage or even bladder disturbances. In this latter regard I have encountered 2 patients on prolonged thyroid therapy who were under the constant attention of urologists for constricted bladder and whose symptoms of frequency and urgency were extreme. The discontinuation of thyroid administration resulted in prompt relief of their symptoms.

[4a] One does encounter a small group of patients who lose weight slowly on an intake of 800 calories a day. Even in the absence of clinical signs of hypothyroidism about one third of these patients lose weight and feel better when they are given 1 or 2 Gm. of thyroid daily, which fact is probably indicative of a masked hypothyroidism.

An essential factor in the treatment of overweight involves proper childhood training. Parents should be subjected to educational campaigns involving the proper feeding of the young, starting with the newborn child. This phase has been described excellently in a recent article by Senn,[6] who amply stresses the various psychic factors in infant nutrition. Bruch [2c] has likewise emphasized these factors and has indicated the harmfulness of treating children as "glandular cases." Pediatricians should be encouraged to place more emphasis on the eating habits of the young from the psychologic point of view as well as from the nutritional aspects, and this should also be placed in the foreground in child welfare clinics and other groups concerned with the proper training of children. Effort expended in this direction will probably be of great value to the future health of the person and prevent numerous ailments which are the result of carrying excessive weight. Probably there will be other benefits, derived as a reflection from this proper childhood training, in regard to such psychosomatic disorders as gastrointestinal, circulatory and dermatologic disturbances.

SUMMARY

Overweight has a strong effect on shortening the life span and increasing the development of degenerative diseases. There is little evidence that obesity is a glandular or metabolic disturbance. The psychologic factors in obesity are paramount, since the tendency to overeat is a strong drive for oral gratification. Any condition which increases the nervous or psychic tension of the person will cause an aggravation of this tendency. These tensions may also result from an organic disturbance. The glandular dysfunctions which contribute to obesity are those which increase psychic tension, namely menopause, puberty, pregnancy and premenstrual tension. Treatment of the patient should be based on an understanding of the psychologic reasons for his overeating. The drug of choice is amphetamine sulfate (Benzedrine sulfate), which is of inestimable value. The possibility of harm from the use of this drug is relatively insignificant. Thyroid therapy in most cases is of little value. The ideal treatment of obesity involves education of the parents to the use of proper eating habits for their children and other psychologic training which induces a satisfactory adjustment to life through emotional maturity.

450 Sutter Street.

---

5. Means, J. H.: Therapeutics of Thyroid, J. A. M. A. **105**:24 (July 6) 1935.

6. Senn, M. J. F.: Influence of Psychological Factors on Nutrition of Childhood, Am. J. Pub Health **35**:211 (March) 1945.

DECOMPRESSION SICKNESS

Some Factors Which Affect the Incidence of Bends at Altitude

W. L. BURKHARDT, M.D.
H. F. ADLER, Ph.D., M.D.
A. F. THOMETZ, M.D.
A. J. ATKINSON, M.D.
and
A. C. IVY, Ph.D., M.D.
Chicago

The expression decompression sickness refers to a group of symptoms and signs which occur on exposure of the body to a too rapid and large decrease in barometric pressure and which are most likely due to the formation or growth of bubbles of gas [1] and not initially to anoxia.

The symptoms are essentially the same whether the person is decompressed from high pressure to sea level pressure, as in caisson disease, or from sea level pressure to altitudes of 25,000 feet or above. The treatment of the symptoms is the same whether they occur in divers or in fliers, namely recompression, though, as in caisson disease, the symptoms may occasionally recur or occur after recompression. The prevention of the symptoms is the same in divers and in fliers, namely denitrogenation or the removal of most of the liter of dissolved gaseous nitrogen by the inhalation of pure oxygen for several hours prior to exposure. For these and other reasons it is believed that the cause of the symptoms in the decompression sickness of divers, caisson workers and fliers is the same, namely bubbles, consisting chiefly of nitrogen, which occlude veins, capillaries and, more rarely, arterioles, collect in tissues, especially fatty tissue, and cause pain by distorting nerves or nerve endings.[2]

The most frequent symptoms of decompression sickness are bends, chokes and abdominal gas pains. Bends refers to pain in the region of the joints. Chokes refers to an inability to inspire without coughing, usually associated with a sense of constriction in the chest or throat. The abdominal gas pains are due to the expansion of gas in the stomach and colon and do not occur if the subject can readily expel the gas. Bends are usually associated with collections of gas or bubbles in the veins or in the tissue of the fascial planes about the joints,[2] tension being a factor in their production.[3] Chokes are apparently due to the collection of bubbles in the small branches of the pulmonary artery, and at times some enlargement of the right side of the heart may be detected.[2]

These symptoms may be so severe as to incapacitate aviators during flight. Bends is the symptom which most frequently causes incapacitation. For example, among 852 cases of forced descent from 38,000 feet in an altitude chamber, 73 per cent were due to intolerable

---

From the Department of Physiology, Northwestern University Medical School.

Read in the symposium on "Physiology of High Altitude Flight" before the Section on Pathology and Physiology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

1. Harvey, E. N.: Decompression Sickness and Bubble Formation in Blood and Tissues, Bull. New York Acad. Med. **21**:505, 1945.

2. Burkhardt, W. L.; Adler, H.; Thometz, A. F.; Atkinson, A. J., and Ivy, A. C.: A Roentgenographic Study of Bends and Chokes at Altitude, J. Aviation Med., to be published.

3. Ferris, E. B.; Blankenhorn, H. A.; Engel, G. L.; Romano, J.; Ryder, H. W.; Webb, J. P., and Guest, G. M.: Personal communication to the authors, August 1942.

bends, 17 per cent to chokes and bends and 13 per cent to abdominal gas pains.[4]

Since pressurized cabin aircraft were not generally available during the war and since such aircraft are subject to fracture in combat, it was and is of strategic importance to know the factors which may affect the incidence and severity of bends. Accordingly, extensive studies of the subject were made during the war, the results of which will be reported in book form by the Subcommittee on Decompression Sickness of the National Research Council under the editorship of Dr. John Fulton.

Our purpose in this paper is to present a portion of the observations we have made on factors which influence the incidence of bends.

TABLE 1.—*Incidence of Bends and Intolerable Bends by Periods and Range of Variation in Seven Subjects*

Standard exercise every 10 minutes at 38,000 feet for two hours, if possible

	Period A		Period B		Period C		Period D		Period E		Period F		Totals		Range Between Periods, %
Subject	No. of Tests	% Bends	No. of Tests	% Bends	No. of Tests	% Bends	No. of Tests	% Bends	No. of Tests	% Bends	No. of Tests	% Bends	No. of Tests	% Bends	
1 Total bends	13	77	9	67	14	57	12	50	11	37	10	40	69	55	77 to 37
Intolerable bends	13	54	9	33	14	50	12	17	11	9	10	30	69	33	54 to 9
6 Total bends	12	92	10	90	9	88	12	92	11	82	10	90	64	89	92 to 82
Intolerable bends	12	67	10	80	9	77	12	67	11	45	10	70	64	67	80 to 45
2 Total bends	12	75	10	90	14	100	11	100	11	82	9	88	67	89	100 to 75
Intolerable bends	12	25	10	80	14	100	11	91	11	51	9	55	67	69	100 to 25
5 Total bends	8	100	7	86	14	93	11	72	11	54	10	40	61	74	100 to 40
Intolerable bends	8	88	7	86	14	93	11	72	11	54	10	40	61	72	93 to 40
4 Total bends	11	91	9	89	14	100	10	70	11	82	10	100	65	89	100 to 70
Intolerable bends	11	91	9	67	14	100	10	60	11	73	10	90	65	82	100 to 60
3 Total bends	13	100	10	90	14	100	12	92	10	100	10	90	69	96	100 to 90
Intolerable bends	13	85	10	90	14	100	12	92	10	80	10	90	69	91	100 to 80
7 Total bends	..	..	..	..	14	85	12	100	11	91	10	100	47	94	100 to 85
Intolerable bends	..	..	..	..	14	85	12	100	11	91	10	100	47	94	100 to 85

Group average. Total bends....................84%; range 55 to 96
Group average. Descents due to bends........72%; range 33 to 94
Group average. Descents due to all causes....78%; range 33 to 100

TABLE 2.—*Effect of a High Fat, High Protein and High Carbohydrate Diet as Compared to a Control Diet on the Incidence of Incapacitating Bends*

	Control Diet			High Fat Diet			Control Diet			High Protein Diet			High Carbohydrate Diet			Control Diet			Total Control Tests		
Subject	No. Tests	Desc.	%	No. Tests	Desc.	%	No. Tests	Desc.	%	No. Tests	Desc.	%	No. Tests	Desc.	%	No. Tests	Desc.	%	No. Tests	Desc.	%
1	13	7	54	9	3	33	12	2	17	14	7	50	11	1	9	10	3	30	35	12	34
2	12	3	25	10	8	80	11	10	91	14	14	100	11	6	54	9	5	55	32	18	56
3	13	12	92	10	9	90	12	11	92	14	14	100	10	8	80	10	9	90	35	32	91
4	11	10	91	9	6	67	10	6	60	14	14	100	11	8	73	10	9	90	31	25	80
5	8	7	88	7	6	86	11	8	72	14	13	93	11	6	54	10	4	40	29	19	66
6	12	8	66	10	8	80	12	8	67	9	7	77	11	5	45	10	7	70	34	23	68
7	..	..	..	..	..	..	12	12	100	13	12	92	11	10	91	10	10	100	22	22	100
Average	69	47	68	55	40	73	80	57	71	92	81	88	76	44	58	69	47	68	218	151	69
Average time at altitude	70*			64			64			44			76			67			67		
Average time onset of bends	42*			42			37			27			44			35			38		

* Minutes. In calculating the average time of the onset of bends the instances in which the subject did not descend in two hours were not included.

TABLE 3.—*Effect of a High Fat, High Protein and High Carbohydrate Diet as Compared to a Control Diet on the Incidence of Bends, Chokes and Abdominal Gas*

		Bends				Chokes				Abdominal Gas				Total Descents	
		All Types		Descents		Total		Descents		Total		Descents			
Procedure	No. of Tests	No. of Cases	%	No. of Cases	%	No. of Cases	%	No. of Cases	%	No. of Cases	%	No. of Cases	%	No. of Cases	%
Control diet	218	181	83	151	69	50	23	5	2.3	29	13	3	1.3	159	73
High fat	55	47	85	40	73	15	27	4	7.3	3	5	0	0	44	80
High protein	92	83	90	81	88	12	13	0	0	14	15	2	2.2	83	90
High carbohydrate	76	57	75	44	58	16	21	1	1.3	23	30	2	2.6	47	62

METHOD

The altitude chamber was used exclusively in our study of the factors which affect the incidence of the bends. In our work the temperature of the chamber was controlled at 70 F. and the rate of ascent was 5,000 feet per minute. Young men ranging in age from 20 to 25 years, averaging 23, were used almost exclusively as subjects.

When exercise was performed at altitude, it consisted of three complete squats (heel-sitting position) and five extensions of arms from side to level of shoulder, each hand holding a 4¼ pound (1,928 Gm.) weight.

The exercise was completed in thirty seconds. Control or mock exposures consisted in taking subjects without their knowledge only to an altitude of 20,000 feet, at which altitude bends does not occur.

---

[4] Gray, J. S.: The Relation of Altitude and Exercise to Decompression Sickness, J. Aviation Med., to be published.

FACTORS

Individual Differences in Susceptibility.—It has been known for almost a century that age is a factor which influences susceptibility to caisson disease.[5] During the recent war it was shown by numerous observers that age predisposes to the symptoms of decompression sickness at altitude.[6]

At the beginning of this war it was assumed that young men in approximately the same age group were either completely susceptible or completely resistant. This view was implied by the assumption that aviators could be classified as regards their susceptibility by one exposure to altitude in an altitude chamber. This assumption was soon found to be false. Its falsity was demonstrated by two types of experiments.

Table 4.—*Selection Obtained by Exposing a Group of 100 Subjects, Noted at 38,000 Feet for Three Hours, Five Times*

The data for the first and fifth flights are shown

Previous Flights, Descents Number	Total		Descents This Flight	
	No	%	No	Rate %
	First Flight			
Total	100	100	30	30 0
	Fifth Flight			
0	40	40	4	10 0
1	29	29	4	13 8
2	15	15	6	40 0
3	11	11	7	63 6
4	5	5	4	80 0
Total	100	100	25	25 0

After the fifth flight 36 had not descended during five flights and 4 had descended during each of the five flights Note that the rate of descent of the 40 who had "passed" four flights was only 10 per cent, whereas the rate of descent of the 100 subjects was 25 per cent.

Table 5.—*Variations Between Individuals in Regard to Tolerance to 38,000 Feet With a Standard Exercise Every Ten Minutes for Two Hours, If Tolerated*

Subjects	No. of Tests	Bends Causing Descents		All Causes of Descents *		Time at Altitude			Total Bends		Descents with No Exercise	
						Exposure						
		No.	% Desc	No.	% Desc	1st Half, Min	2d Half, Min	Average, Min	No.	%	No	%
1	91	36	40	36	40	91	108	100	51	55	19	10
6	87	61	70	66	76	58	73	66	75	86	19	47
2	67	46	69	53	80	71	62	66	60	89	18	28
5	86	65	75	70	81	58	70	66	66	76	11	36
4	83	70	84	71	86	67	[illegible]	61	76	91	15	13
3	85	71	84	75	88	34†	54†	46	84	99	15	53
7	73	68	93	71	96	26	31	28	73	100	..	..

* Bends, chokes, abdominal pain, dizziness (not due to anoxia)
† Change is significant

One way to demonstrate that the susceptibility to decompression sickness varies among young men is to expose a small group of subjects many times under standard conditions. For example, 7 subjects under dietary control were exposed three times a week during the evening to an altitude of 38,000 feet, where they performed our standard exercise every ten minutes for two hours, if possible. It will be noted in table 1 that subject 1, who was the least susceptible to bends, had to descend because of incapacitating bends during 33 per cent of sixty-nine exposures. Subject 7 had to descend during 94 per cent of forty-seven exposures. In addition, the data in table 1 are grouped into periods or groups of exposures to illustrate how the average susceptibility of an individual may appear to vary when the individual is exposed only ten to fourteen times to the same conditions at altitude.

Table 6.—*Effect of a Pecuniary Incentive on the Incidence of Descents Due to Incapacitating Bends*

The subjects were exposed while seated to 40,000 feet for one hour, if possible

	Subjects Not Paid		Subjects Paid	
	No	%	No.	%
Number of subjects exposed	105		50	..
Total bends and chokes	57	54	28	56
Descents due to intolerable bends and chokes	34*	32	10*	20

* This difference could occur by chance in 10 of 100 subjects, 5 of 100 is usually considered significant Descents due to chokes in the nonpaid group amounted to 1 case, and in the paid group to 2

Another way to demonstrate the variation in susceptibility among individuals in the same age group (20 to 25 years) is to expose a large group to the same conditions at altitude a few times. This is illustrated by the data in table 2, 100 young adult males being exposed while seated to 38,000 feet for three hours. It is to be noted that 30 of the 100 descended during the first exposure. After the fifth exposure 36 of the subjects had "passed" five flights and 4 had "failed" the five flights.

Does the susceptibility of an individual change on repeated exposure under controlled conditions? It is necessary to have an answer to this question if a group of subjects are to be exposed repeatedly in order to determine the effect of a factor which may alter susceptibility.

In table 3 data on 7 subjects who were repeatedly exposed under controlled conditions are presented. In the column headed "time at altitude" the average time of each subject at altitude is given for the first and second halves of the exposures. For example, in the case of subject 1 the average time at altitude for the first forty-five exposures was ninety-one minutes and for the last forty-six exposures one hundred and eight minutes. The only difference which is significant occurs in the case of subject 3, who apparently became more susceptible with time. Thus, the susceptibility was significantly changed by repeated exposures in only 1 of 7 subjects. A change in susceptibility with seasons was ruled out in the 6 subjects because these exposures occurred over a period of one year.

Table 7.—*Effect of Exercise on the Incidence of Bends*

	All Types of Bends			Descents Due to Intolerable Bends		
	Total No. of Tests	No. of Cases of Bends	%	Total No. of Tests	No. of Cases of Bends	%
Control diet with exercise	218	181	83	218	151	69
Control diet without exercise	97	61	63	97	35	36

Seven subjects were exposed to 38,000 feet three times a week during the evening and performed the standard exercise given under methods

In regard to the number of descents, 2 subjects in table 1 (subjects 1 and 5) appeared to show some favorable or positive adaptation, but this was not true of the group as a whole. Besides, 2 additional subjects were exposed approximately three times a week to 40,000 feet for fifteen minutes. Subject A developed bends in 23 per cent of the first thirty exposures and in 29 per cent of the next twenty-four exposures. Subject B developed bends in 19 per cent of the first twenty-six exposures and in 17 per cent of the next eighteen exposures.

---

[5] Hill, L E Caisson Sickness, London, Edward Arnold, 1896

[6] Motley, H L, Chinn, H I, and Odell, F A Studies on Bends, J Aviation Med 16: 210, 1945

TABLE 8.—*Rate of Descent on Exposure to 40,000 Feet for One Hour Without Exercise Compared With the Rate of Descent on Exposure to 38,000 Feet for Two Hours With Our Standard Exercise*

	Total Subjects	All Types of Bends		Descents Due to Intolerable Bends	
		No. of Cases of Bends	%	No. of Cases of Bends	%
40,000 ft. seated for 1 hr	101	56	51	33	32
38,000 ft. for 2 hrs. with standard exercise	51	44	86	38	74
38,000 ft for 2 hrs. seated	97	64	66	35	36

Does incentive influence the incidence of descents due to "incapacitating bends"? Incentive is an obvious factor which may influence the decision of a subject to descend when suffering from bends, chokes or abdominal gas.

We attempted to check on the incentive by mock exposures. In another group of experiments we augmented the incentive to remain at altitude by offering a bonus of $0.50 for the first half hour and for every additional fifteen minutes each subject remained at altitude. In the latter experiments the subjects were exposed to an altitude of 40,000 feet while seated. The bonus was offered to a group of 50 subjects and not to a group of 105 subjects.

TABLE 9.—*Incidence of Incapacitating Bends at 38,000 Feet With Exercise (Five Extensions of the Arms with 4¼ Pounds in Each Hand, and Three Complete Squats) Every Ten Minutes With and Without Preoxygenation for One Hour*

Subjects were required to remain at altitude for two hours, if possible

Procedure	No. of Tests	Descents Due to Incapacitating Bends		Average Time at Altitude Out of 120 Min.
		No. of Cases	%	
Control	218	151	69	66
Preoxygenation for 1 hour	50	9*	18	108

* Includes 2 cases of chokes.

TABLE 10.—*The Diet*

Diet	Protein, Gm.	Carbohydrate, Gm.	Fat, Gm.	Calories
Control	79	373	129	2,971
Fat	82	115	252	3,058
Protein	280	130	164	3,116
Carbohydrate	74	574	47	3,015

Referring to table 4, it will be noted that although the pecuniary incentive did not alter the incidence of all degrees of bends and chokes the incidence of descents due to "incapacitating bends" was reduced. The observed reduction in descents, however, could occur by chance in ten of one hundred such experiments; hence, some would not consider this reduction significant.

The results indicate that the incidence of "incapacitating bends" is likely to be lower when the incentive is high, as for example under the conditions of combat.

Exercise at Altitude.—Exercise at altitude definitely increases the incidence of bends and chokes. This was first demonstrated by Ferris and his colleagues.[3]

Our data showing the effect of exercise on the incidence of bends are shown in table 7. In this experiment 7 subjects under dietary control were exposed to 38,000 feet without exercising for a total of 97 subject exposures and with the standard exercise for 218 subject exposures. The exercise increased the incidence of descents from 36 per cent to 69 per cent.

TABLE 11.—*Diets*

Breakfast	Dinner	Supper
	Normal Diet	
200 Orange juice	50 Steak	50 Turkey
20 Cornflakes	100 Potato	100 Potato
40 Bread	100 Green beans	75 Spinach
20 Butter	75 Tomatoes	100 Peas
100 Cream (18%)	25 Lettuce	25 Lettuce
50 Sugar	20 Butter	150 Grapefruit
200 Milk	40 Bread	40 Bread
	20 Cream	20 Butter
	10 Sugar	20 Cream
	75 Ice cream	10 Sugar
	20 Brown sugar	75 Ice cream
	100 Pears	20 Brown sugar
	200 Milk	200 Milk
	Coffee (if desired)	
	High Fat Diet	
125 Orange juice	100 Steak	100 Turkey
1 Egg	50 Potato	50 Spinach
20 Bread	50 Carrots	50 String beans
24 Butter	20 Bread	20 Bread
30 Bacon	48 Butter	48 Butter
125 Milk	125 Milk	100 Lettuce and tomato
125 Cream	125 Cream	30 French dressing
	100 Apple	50 Canned peaches
		125 Milk
		155 Cream
		50 Ice cream
	High Carbohydrate diet	
125 Orange juice	Egg	75 Beef
100 Banana	200 Potato	50 Ketchup
25 Oatmeal (dry)	100 Corn and lima beans (succotash)	200 Potato
60 Sugar	60 Bread	50 Carrots
60 Toast	50 Jelly	100 Waldorf salad Apple Lettuce Raisin 25 Gm
50 Jelly	100 Rhubarb or strawberries	100 Canned pears
375 Milk	15 Brown sugar	100 Ice cream
	250 Milk	30 Brown sugar sauce
		60 Bread
		50 Jelly
	High Protein Diet	
200 Orange juice with 1 egg white	Fat free broth with 1½ t. gelatin	Fat-free broth with 1½ t. gelatin
3 Scrambled eggs	200 Chicken	200 Steak
100 Cheese (grated and melted)	25 Lettuce	25 Lettuce
100 Strawberries	100 Cottage cheese	100 Cottage cheese
1 Slice bread	100 Tomatoes (cooked)	50 Carrots
100 Lean ham	10 Bread	50 Spinach
	100 Peas	22 Navy beans (dry)
	100 Gelatin	10 Bread
	100 Eggnog	200 Apple
	50 American cheese	100 Eggnog
		50 American cheese

The results recorded in table 8, a large number of subjects being used, show that the mild exercise approximately doubled the incidence of descents. Gray[4] has presented evidence showing that mild exercise decreases the altitude at which descents from bends occur by about 5,000 feet. In his subjects approximately 1 per cent of descents occurred with exercise at 27,000 feet, and 6 per cent without exercise at 33,000 feet.

Preoxygenation or Denitrogenation.—In 1937 Behnke[7] demonstrated that the breathing of oxygen causes gaseous nitrogen to be eliminated from the body and that denitrogenation by this method prevents bends in divers. Soon after the onset of the recent war it was demonstrated by several groups of investigators in Canada and in the United States that denitrogenation prior to ascent would sharply decrease the incidence of bends and chokes.

Our observations on the effect of breathing oxygen for one hour prior to ascent are shown in table 9. The subjects were exposed to an altitude of 38,000 feet and performed the standard exercise. One hour of preoxygenation prior to ascent decreased the incidence of descents from 69 to 18 per cent and increased the average time at altitude from sixty-six minutes to one hundred and eight minutes.

Effect of Diet on Incidence of Decompression Sickness.—This study was undertaken to ascertain whether changes in the diet might account for variations in susceptibility to decompression sickness.

The diets are shown in table 10. It will be noted that levels of protein, fat and carbohydrate in the respective "high" diets are rather extreme. This was considered advisable to exaggerate any effects protein, fat or carbohydrate might have.

The 7 subjects were exposed to 38,000 feet and performed the standard exercise every ten minutes. They remained at altitude for two hours, if possible. The exposures occurred three times a week approximately one and a half hours after the evening meal.

The incidence of incapacitating bends during the three periods on the control diet and the period of the high protein, fat and carbohydrate diets is shown in table 2. It is to be noted that the average descent rate during each of the three periods on the control diet is almost identical. The high protein diet significantly increased and the high carbohydrate diet significantly decreased the incidence of incapacitating bends. The high protein diet decreased the average time of the onset of bends and the average time at altitude. The high carbohydrate diet increased the time of the onset of bends and the average time at altitude. The high fat diet had no significant effect on the incidence of bends.

The results on the effect of the diets on the incidence of chokes and abdominal gas pains are summarized in table 3. The high fat diet appeared to increase the severity of chokes, but this was not significant because of the few cases. The high carbohydrate diet did not increase the incidence of abdominal gas pains. The decrease in abdominal gas pains on the high fat diet is striking. The menus are shown in table 11.

During this study the ground level barometric pressures were recorded. No correlation was found between these records and the occurrence of bends; the same was true of prevailing weather conditions.

COMMENT

These results show that a very high protein diet predisposes to descents due to bends and that a high carbohydrate diet has the opposite influence. Since these effects were observed with extremes in the diet, it is unlikely that ordinary dietary conditions have an appreciable influence on the susceptibility to bends.

Experiments were conducted on the effect of the administration of desiccated thyroid over a period of five weeks. A significant change in susceptibility was not found.

The administration of analgesic drugs and drugs which increase the feeling of well being (aspirin, amphetamine, phenacetin, demerol, codeine) in amounts short of the production of undesirable effects had no significant effect on the descent rate; the average time at altitude, however, was prolonged.

CONCLUSIONS

It seems clear from our observations and from those of others that, with the exception of age, altitude and exercise at altitude are the most important factors which predispose to bends and chokes in aviators. Denitrogenation by breathing undiluted oxygen prior to or during ascent is the most effective method for the prevention of bends and chokes. A high fat diet (250 Gm. daily) was found to be the most effective procedure for reducing abdominal gas pains in our subjects. A very high protein diet predisposes to bends and a very high carbohydrate diet has the opposite effect.

ABSTRACT OF DISCUSSION

DR. A. C. IVY, Chicago: Observations have been made on a number of factors which affect the incidence of bends. Our report emphasizes only some of the factors which we have studied. In the time at our disposal it has not been practical to refer to the work of others in this field. All the work on this subject that has been done during the war will be published in book form by the Subcommittee on Decompression Sickness of the National Research Council under the editorship of Dr. John Fulton.

---

[7] Behnke, A. R.: Analysis of Accidents Occurring in Training with Submarine "Lung," U. S. Nav. M. Bull. **30**: 177, 1932.

SURGICAL REFRIGERATION AND PRESERVATION OF TISSUE

LYMAN WEEKS CROSSMAN, M.D., F.I.C.S.
and
FREDERICK M. ALLEN, M.D.
New York

The trial period of surgical refrigeration may be measured from the first publication of experiments on animals and clinical cases in 1937[1] or, better, from the adoption of the method on the surgical service of the City Hospital in 1941.[2] It is now timely to review the experience of these years. The method originated as a shockless anesthesia, but its extension to preservative and other uses has greatly widened its application.

The theoretic or experimental attacks against the principle of reduced temperature were answered in former publications.[3] Opponents attributed to reduced temperature injuries which were actually due to complicating conditions such as pressure or the moisture and other factors which are concerned in "immersion foot"; they also failed to distinguish the different action of cold on the entire body, on local parts of the body or on local parts isolated from the body by amputation or a tourniquet. They also did not differentiate between the effects of cold and the effects of the defen-

---

From the City Hospital, Welfare Island.

Read before the joint meeting of the Section on Orthopedic Surgery and the Section on Anesthesiology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 5, 1946.

[1] Allen, F. M.: Tr. A. Am. Physicians **52**: 189-194, 1937.

[2] Crossman, L. W.; Ruggiero, W. F.; Hurley, V., and Allen, F. M.: Reduced Temperatures in Surgery: Amputations for Peripheral Vascular Disease, Arch. Surg. **44**: 139-156 (Jan.) 1942.

[3] Allen, F. M.: Arch. Phys. Med. **26**: 92-98, 1945; Anesth. & Analg. **24**: 51-65, 1945; Am. J. Surg. **54**: 170-184, 1945. Crossman, L. W., and Allen, F. M.: S. Clin. North America **25**: 361-370, 1945; Shock and Refrigeration, J. A. M. A. **130**: 185-189 (Jan. 26) 1946.

sive reactions against cold, which are clearly illustrated by the fatal results of exposure due to exhaustion from shivering and other defenses which prevent fall of temperature until the mechanism breaks down, as contrasted with Temple Fay's artificial inhibition of these defenses permitting temperatures of 10 to 20 degrees below normal to be tolerated safely for as long as a week. Actual freezing, which is instantly fatal for the entire body, can be safely endured for brief periods by local parts, even by such delicate tissues as the liver and the brain. But the "triple response" described by Lewis is the reaction to cold by tissues which retain their circulatory and nervous connections with the body, while a limb isolated by a tourniquet becomes chilled quickly and thoroughly without any such response, and isolated structures such as skin grafts or segments of blood vessels or spermatozoa can be kept alive for days or weeks not only at ordinary ice box temperatures but also when frozen at the temperature of solid carbon dioxide.

PRESERVATION OF DEAD PARTS

As refrigeration is the regular commercial process for preserving dead meat from decomposition, so likewise it can be used to preserve a dead limb which for some reason cannot be amputated but which would set up a rapidly fatal intoxication if allowed to decompose.

For example, in the City Hospital an obese woman aged 67 years underwent operation for removal of an embolus from the common femoral artery. Pulsation returned, but it was absent twenty-four hours later, when another embolectomy restored circulation for four hours. The patient refused any further operation, and in spite of customary treatments the first signs of beginning gangrene were evident the next day, with a faint line of demarcation proximal to the patella. The limb was completely encased in bare ice bags. The appearance of the tissue improved. The line of demarcation was no longer perceptible. In some areas finger pressure caused blanching followed by a return of color, indicating some superficial collateral circulation. After six weeks the woman died of coronary thrombosis, her original ailment having been cardiac. During this time she was comfortable, without pain or toxic symptoms, and the limb was not macerated or malodorous.

A second case was that of a woman seen in consultation in another hospital, who, on account of a simple psychoneurosis, had chronically undernourished herself until her weight was about 80 pounds (36.3 Kg.). There was no known cause, except this malnutrition, for the sudden occurrence of bilateral femoral thrombosis, which necessitated an emergency call for a physician. When the patient was seen in the hospital after the usual measures had failed to restore circulation, there was intractable pain and vomiting, and the prognosis was for less than twenty-four hours of survival. It was advised to surround both legs with ice bags to the groins. Within two hours the pain, which had resisted relief from administration of opiates, was gone, and within six hours liquid nourishment was taken without nausea. The skin, which had been dead white, blue mottled or ecchymotic in different areas, acquired a more normal color. The general nutrition was built up by forced feeding, aided by administration of insulin. After ten days the attending surgeon performed a supracondylar amputation of the left leg, because of gradual return of pain and absence of any signs of circulation below the knee. The arteries at operation were found clotted shut. Healing was delayed by sloughing of some nonviable tissue, but otherwise the collateral circulation sufficed for healing. Pathologic examination of the amputated leg revealed scarcely any perceptible degeneration, testifying to the excellent preservation by cold. The utmost effort was made to save the other leg, in the hope that collateral circulation might with sufficient time make its way below the knee even though the large arteries were obviously blocked. The color of the skin actually became better with time, and sensation, especially of deep pressure, was positive well down the calf. After two weeks a small incision was made in the groin, which proved that the femoral artery was filled with clot to above Poupart's ligament. The artery was not opened, but its nerve plexus was stripped for any possible dilating effect on lower branches. After four weeks of thorough refrigeration, however, the toes and anterior part of the foot became slightly shriveled and wrinkled; sensation was lost in the calf, and pain and discoloration around the knee indicated demarcation. Amputation then in the lower third of the thigh was followed by primary union. Pathologic examination of this leg showed trivial degenerative signs, demonstrating the nearly complete preservation by cold for four weeks. The patient is now walking on artificial limbs.

In other cases the preservation has been effective for variable periods of two weeks and upward. Inevitably, degeneration must occur in a bloodless limb and a modified demarcation must form. The final change in the dead tissues is more in the form of shrinkage and mummification than the usual necrosis. Also pain and a modified intoxication may finally compel amputation. The usual reason for delay in operating is a bad general state of the patient; for example, most of our patients have been those with severe cardiac disease transferred from the medical service because of a major embolism. Besides the chance of constitutional improvement, there is sometimes the advantage of a lower level of amputation, as mentioned hereafter. Obviously, the penetration of cold is more thorough in proportion as circulation is lacking, and efficient preservation even of the deep tissues is thus favored. No tourniquet is needed except briefly for anesthesia at the final amputation.

We consider it clear that the case described by Richards [4] belongs in the category of preservation of dead and already decomposing tissue. The condition was one of embolism and ineffectual embolectomy. The microscopic changes found are sufficiently explained by the interval of several days both before and after the use of refrigeration, and the other evidence now at hand sufficiently excludes refrigeration as a cause.

PRESERVATION OF INFECTED OR INJURED PARTS

The first observations along the line of preservation of infected or injured parts were made when patients entered our hospital with acutely dangerous infected gangrene, but legal permission for the necessary amputation could not be immediately obtained. We thus learned that packing such limbs in ice or ice bags made possible not only a safe postponement of the operation for several days but even an improvement of the general condition so as to lessen the operative risk. This method has been employed by Smith [5] and others without a tourniquet, by Haley [6] with a tourniquet and especially by McElvenny,[7] either by simple chilling or by solid freezing for several weeks. The tissues thus treated, whether living or dead, are sacrificed finally by amputation.

A more definitive preservation may be attemped in treatment of other infections of the limbs, such as gas gangrene. Refrigeration is helpful even when amputation is inevitable, but in less extreme conditions the radical chilling contributes to save the limb in two ways: by directly checking the toxin production and its necrotizing action on the tissues and by gaining time for administration of drugs or other systemic means of cure. A tourniquet is not employed except as a preliminary to amputation.

---

[4] Richards, V.: Ann. Surg. **119**: 178-200, 1944.

[5] Smith, W. E.: Ohio State M. J. **38**: 826-829, 1942.

[6] Haley, E. R.: Arteriosclerotic Gangrene: Report on Refrigeration Prior to Amputation, Arch. Surg. **46**: 518-524 (April) 1943.

[7] McElvenny, R. T.: Am. J. Surg. **58**: 110-112, 1942; Arch. Phys. Therapy **25**: 599-602, 1944.

In cases of severe trauma of limbs, such as described by Mock[8] and by Ottaway and Foote,[9] refrigeration serves preeminently to gain time in an emergency by preserving the injured part for days or weeks until the patient gains sufficient constitutional strength to withstand amputation. A secondary benefit, however, is reported as the development of collateral circulation during the time thus gained, so as to permit a lower level of amputation. This may make the difference between an emergency amputation high in the thigh and an amputation just above the knee a few weeks later. While this difference has practical importance for the patient's subsequent walking and earning ability, it also carries the theoretic lesson that prolonged refrigeration does not prevent collateral circulation by vasoconstriction. On the contrary, we have suggested that it may prove to be the best treatment for traumatic arterial spasm, but we have not yet had any cases for demonstrating this theory.

The importance of this preservation of tissue is illustrated also in cases in which it is not used. In France a war correspondent's jeep was crushed by a tank, and the man died the next morning in a hospital during attempted amputation of one leg.[10] In a marine with a thigh shattered by shell fragments signs of gas gangrene developed during 18 hours in a hospital; amputation was then performed, and he died twenty hours later.[11] Such accidents occur by thousands in war and in peace, and undoubtedly many losses of life or limb could have been prevented by adoption of this method of preservation. We have not yet had opportunity to test the proposal of refrigeration to extend the time limits and improve the results of embolectomy in reasonably early cases. Surgeons having experience with any of this wide range of accidents can render service by publishing their results to stimulate wider use of the plan.

PRESERVATION FOR RECONSTRUCTION

A still higher accomplishment is when refrigeration not merely tides over an emergency but prevents amputation altogether. A personal communication from Dr. I. W. Nachlas, of Baltimore, may be quoted as a perfect example.

> The patient who comes to us in shock from multiple injuries and presents severe damage to his extremities offers a real problem. Though treatment for shock is instituted immediately, the traumatized extremities must be handled promptly so as to avoid infection and, in addition, to eliminate a contributing factor to systemic shock. This leads in many instances to amputation, usually the guillotine type, an operation which in the hands of trained surgeons is said to produce a minimum of shock. If the same patient were to come in without restrictions against reconstructive surgery, his extremities might be subjected to reconstruction rather than amputation. Obviously a procedure that will permit a delay in the operative work without endangering the patient from either local infection and decomposition or addition to the shock should prove of great value.
>
> We have met such situations by a device that has proved eminently satisfactory. The following case is an illustration in point.
>
> A man was brought in for injuries sustained in a blast accident. He was in shock and gave evidence of grave intra-abdominal trauma, as indicated by blood in the stool and urine. His abdomen was rigid. In addition, one hand was amputated by the accident at the level of the wrist, and the skin of the forearm was shredded for about 2 inches (5 cm.) proximally. The other hand was a mass of mangled tissue, and we were asked to amputate this extremity in the forearm. Instead of an emergency operation being done on these extremities, both limbs, which had been amply powdered with sulfanilamide, were refrigerated by having them surrounded with crushed ice. Plasma and transfusions were used freely, but it was almost two and a half weeks before the abdominal symptoms cleared up enough to permit us to do reconstructive work on the upper limbs. At that time, definite amputation was done on the one that had already lost the hand, the level being only 1 inch (2.5 cm.) above the lacerated skin area. This healed per primam in the usual length of time. For the other hand skeletal traction was used, the fingers being extended on a banjo splint. A minimal débridement was performed. The compounded fractures were covered with sulfanilamide powder, and the entire palm, which had been denuded of skin by the injury, was covered with sulfanilamide ointment.
>
> The clinical course has been simply phenomenal. The multiple fractures of the hand have all healed in good position with the exception of the little finger, where the compound fracture of one of the phalanges has undergone some sequestration from osteomyelitis. Granulations have filled in the large gaping areas, and epithelium has covered a large proportion of the exposed areas. At the present time a relatively small spot remains to be covered by a graft. The function of the thumb and the adjacent three fingers has already been restored. The little finger is still immobilized. Under conventional treatment or at the front, this patient would have come out—if he had come out—without the two forearms. He now has one useful, well functioning hand to save him from the horrors of no prehensile limb.

The minimal débridement is one noteworthy point in this case. As mentioned in our former papers, we do not débride for either mechanical wounds or burns. Refrigeration permits saving the whole of the living tissue, which is partly sacrificed by the usual débridement.

PRESERVATION OF SEVERED PARTS

Mass and complexity of structure evidently are factors in the capacity for preservation, because there is no known way of preserving limbs in a chilled or frozen state for weeks or months, as is possible with some isolated tissues or grafts. The reduction or near suspension of metabolism by cold can, however, enable limbs to survive without blood supply for a surgically important period.

An illustration in minor surgery was reported by one of us,[12] showing that refrigeration aids in restoring fingers which have been cut off so as to hang by a mere shred of skin. Such a finger may be kept well chilled according to instructions given by telephone and will thus remain viable at least during several hours which may elapse before the patient can reach the doctor. Theoretically the interval might extend to twenty-gangrene. Refrigeration is helpful even when amputation is inevitable, but in less extreme conditions the radical chilling contributes to save the limb in two ways: by directly checking the toxin production and its necrotizing action on the tissues and by gaining time for administration of drugs or other systemic means of cure. A tourniquet is not employed except as a preliminary to amputation.

---

[8] Mock, H. E., and Mock, H. E., Jr.: Refrigeration Anesthesia in Amputations, J. A. M. A. **123**: 13-17 (Sept. 4) 1943. Mock, H. E., and Tannehill, E. H.: Surg., Gynec. & Obst. **78**: 429-433, 1944.

[9] Ottaway, J. P., and Foote, J. F.: U. S. Nav. M. Bull. **43**: 1041-1043, 1944.

[10] Allen, F. M.: J. Internat. Coll. Surgeons **7**: 423-435, 1944.

[11] Bowen, F. H.: U. S. Nav. M. Bull. **44**: 777-785, 1945.

[12] Crossman, L. W.: Refrigeration for Crushed Finger, Correspondence, J. A. M. A. **130**: 667 (March 9) 1946.

In cases of severe trauma of limbs, such as described by Mock[8] and by Ottaway and Foote,[9] refrigeration serves preeminently to gain time in an emergency by preserving the injured part for days or weeks until the patient gains sufficient constitutional strength to withstand amputation. A secondary benefit, however, is reported as the development of collateral circulation during the time thus gained, so as to permit a lower level of amputation. This may make the difference between an emergency amputation high in the thigh and an amputation just above the knee a few weeks later. While this difference has practical importance for the patient's subsequent walking and earning ability, it also carries the theoretic lesson that prolonged refrigeration does not prevent collateral circulation by vasoconstriction. On the contrary, we have suggested that it may prove to be the best treatment for traumatic arterial spasm, but we have not yet had any cases for demonstrating this theory.

The importance of this preservation of tissue is illustrated also in cases in which it is not used. In France a war correspondent's jeep was crushed by a tank, and the man died the next morning in a hospital during attempted amputation of one leg.[10] In a marine with a thigh shattered by shell fragments signs of gas gangrene developed during 18 hours in a hospital; amputation was then performed, and he died twenty hours later.[11] Such accidents occur by thousands in war and in peace, and undoubtedly many losses of life or limb could have been prevented by adoption of this method of preservation. We have not yet had opportunity to test the proposal of refrigeration to extend the time limits and improve the results of embolectomy in reasonably early cases. Surgeons having experience with any of this wide range of accidents can render service by publishing their results to stimulate wider use of the plan.

PRESERVATION FOR RECONSTRUCTION

A still higher accomplishment is when refrigeration not merely tides over an emergency but prevents amputation altogether. A personal communication from Dr. I. W. Nachlas, of Baltimore, may be quoted as a perfect example.

> The patient who comes to us in shock from multiple injuries and presents severe damage to his extremities offers a real problem. Though treatment for shock is instituted immediately, the traumatized extremities must be handled promptly so as to avoid infection and, in addition, to eliminate a contributing factor to systemic shock. This leads in many instances to amputation, usually the guillotine type, an operation which in the hands of trained surgeons is said to produce a minimum of shock. If the same patient were to come in without restrictions against reconstructive surgery, his extremities might be subjected to reconstruction rather than amputation. Obviously a procedure that will permit a delay in the operative work without endangering the patient from either local infection and decomposition or addition to the shock should prove of great value.
>
> We have met such situations by a device that has proved eminently satisfactory. The following case is an illustration in point.
>
> A man was brought in for injuries sustained in a blast accident. He was in shock and gave evidence of grave intra-abdominal trauma, as indicated by blood in the stool and urine. His abdomen was rigid. In addition, one hand was amputated by the accident at the level of the wrist, and the skin of the forearm was shredded for about 2 inches (5 cm.) proximally. The other hand was a mass of mangled tissue, and we were asked to amputate this extremity in the forearm. Instead of an emergency operation being done on these extremities, both limbs, which had been amply powdered with sulfanilamide, were refrigerated by having them surrounded with crushed ice. Plasma and transfusions were used freely, but it was almost two and a half weeks before the abdominal symptoms cleared up enough to permit us to do reconstructive work on the upper limbs. At that time, definite amputation was done on the one that had already lost the hand, the level being only 1 inch (2.5 cm.) above the lacerated skin area. This healed per primam in the usual length of time. For the other hand skeletal traction was used, the fingers being extended on a banjo splint. A minimal débridement was performed. The compounded fractures were covered with sulfanilamide powder, and the entire palm, which had been denuded of skin by the injury, was covered with sulfanilamide ointment.
>
> The clinical course has been simply phenomenal. The multiple fractures of the hand have all healed in good position with the exception of the little finger, where the compound fracture of one of the phalanges has undergone some sequestration from osteomyelitis. Granulations have filled in the large gaping areas, and epithelium has covered a large proportion of the exposed areas. At the present time a relatively small spot remains to be covered by a graft. The function of the thumb and the adjacent three fingers has already been restored. The little finger is still immobilized. Under conventional treatment or at the front, this patient would have come out—if he had come out—without the two forearms. He now has one useful, well functioning hand to save him from the horrors of no prehensile limb.

The minimal débridement is one noteworthy point in this case. As mentioned in our former papers, we do not débride for either mechanical wounds or burns. Refrigeration permits saving the whole of the living tissue, which is partly sacrificed by the usual débridement.

PRESERVATION OF SEVERED PARTS

Mass and complexity of structure evidently are factors in the capacity for preservation, because there is no known way of preserving limbs in a chilled or frozen state for weeks or months, as is possible with some isolated tissues or grafts. The reduction or near suspension of metabolism by cold can, however, enable limbs to survive without blood supply for a surgically important period.

An illustration in minor surgery was reported by one of us,[12] showing that refrigeration aids in restoring fingers which have been cut off so as to hang by a mere shred of skin. Such a finger may be kept well chilled according to instructions given by telephone and will thus remain viable at least during several hours which may elapse before the patient can reach the doctor. Theoretically the interval might extend to twenty-hydrochloride will be necessary when the deep nerves are reached. One of us (L. W. C.) was thus able to cut through the layers of a thick abdomen down to the peritoneum, which proved sensitive. Partial anesthesia for a hip joint operation was mentioned previously.[3]

---

[8] Mock, H. E., and Mock, H. E., Jr.: Refrigeration Anesthesia in Amputations, J. A. M. A. **123**: 13-17 (Sept. 4) 1943. Mock, H. E., and Tannehill, E. H.: Surg., Gynec. & Obst. **78**: 429-433, 1944.

[9] Ottaway, J. P., and Foote, J. F.: U. S. Nav. M. Bull. **43**: 1041-1043, 1944.

[10] Allen, F. M.: J. Internat. Coll. Surgeons **7**: 423-435, 1944.

[11] Bowen, F. H.: U. S. Nav. M. Bull. **44**: 777-785, 1945.

[12] Crossman, L. W.: Refrigeration for Crushed Finger, Correspondence, J. A. M. A. **130**: 667 (March 9) 1946.

The dwindling attacks against refrigeration can now be answered in two ways.

First, mortality figures are not a sole criterion of surgical skill. Surgeons of unquestioned standing have reported high mortality rates in series of amputations, and many of them have testified that the number of these deaths has been reduced by refrigeration. Phenomenally low mortality rates furnish no evidence that any surgeon dealing with such favorable material could manage the worst cases of a large public hospital with equal success or without the need for refrigeration. As we have mentioned elsewhere, our mortality rate from only one complication, namely, heart disease, during the several weeks following amputation is greater than the total mortality rate of these critics. Also the lowest mortality rate is too high if it can be reduced, and there is reason to believe that refrigeration used in the few desperate cases in these select series would save some lives, just as it has in the experience of other surgeons.

Second, we may revert to the stated facts, e. g., that animals' legs have survived application of a tourniquet and refrigeration for fifty-four hours, that vascular anastomosis and replacement of dogs' legs have succeeded after amputation and refrigeration for twenty-four hours, that human amputation wounds have healed in areas that had been iced for from two to four weeks and that a mangled hand can be reconstructed after refrigeration for two weeks. These facts, verified from many sources, permit judgment of assertions made without any proof (e. g., by Standard[16]) that two or three hours of refrigeration anesthesia gravely injures tissues and also makes them unfit for the delicate hemostasis which distinguishes his amputations. All such statements imply that the method has not been learned and that perhaps freezing has occurred, since all surgeons who have used the method correctly can corroborate the proofs that the cold tissues are absolutely unchanged in consistency and are fit for the most painstaking surgical procedures. Also one of us (F. M. A.), in many years of experience, has never encountered a surgeon who did not reject some patients with gangrene as inoperable, until with the advent of refrigeration we have operated on every patient regardless of condition; some statistics may thus be explained.

FURTHER DEVELOPMENTS

Cold has the unique ability to inhibit simultaneously pain, shock, infection, toxic absorption and tissue devitalization. Speaking always of emergency treatments at temperatures above freezing, we can state the general rule that the lower the temperature, the greater is the effect. Among the results of our recent experiments on animals[17] are the three following effects:

1. *Shock.*—While all writers now agree on the value of reduced temperature in shock, the prophylactic effect is still greater than the therapeutic effect. Fay[18] first introduced systemic hypothermia in shock treatment, but there is no record of his having used it prophylactically in operations. Our experiments show that while body temperatures of 80 F. or lower are not so powerful as the near-freezing temperature of local refrigeration the inhibition of shock is nevertheless striking. This fact may have occasional surgical application; for example, in the case of a desperately injured patient requiring a double hip disarticulation which would ordinarily be fatal. The recommended procedure then would be to apply ice to the hip region for the utmost local penetration and, at the same time, with the patient under sedation allow the general body temperature to fall to about 80 F. In this way the operation can be performed with remarkably little shock and also with minimal need for anesthesia.

2. *Abdominal Operations and Injuries.*—Preservation of tissues by reduced temperature is universal throughout the body, but the inhibition of shock is not universal. Reduced temperature is found to be not helpful, in the sense of either prophylaxis or therapy, for shock from intestinal trauma, and therefore the aforementioned systemic hypothermia cannot be recommended for abdominal operations. This new differentiation between forms of shock may have wider theoretic significance.

3. *Burns.*—The superficial location of burns makes them accessible to temperature treatment, and they preeminently need the combined inhibition of pain, shock, infection, toxic absorption and tissue devitalization. The usual inertia of authorities has delayed the adoption of this treatment for several years, but any intelligent trial of local refrigeration will prove its dramatic benefits. The possibilities of systemic hypothermia for the most extensive burns will be discussed elsewhere.

CONCLUSIONS

1. Experience to date continues to confirm the safety and benefit of refrigeration anesthesia.

2. Not only is this anesthesia by brief chilling advantageous for orthopedic and reconstructive operations, but also successful healing has been reported in limbs which have been refrigerated for a number of days or weeks. Besides clinching the harmlessness of the low temperature, these observations point the way to new developments in surgery.

3. Recent experiments define some limitations and also extensions of hypothermic treatment. They suggest uses of reduced temperature prophylactically in some operations involving shock and therapeutically, especially for burns.

133 East 58th Street—1031 Fifth Avenue.

ABSTRACT OF DISCUSSION

Dr. Bruce M. Anderson, Oakland, Calif.: There is no doubt of the value of this procedure. I want to offer one note of caution from what I have observed in the practice in Oakland, i. e., that care should be taken in the giving of anesthesia, that the complete equipment is available and that well trained personnel are on hand, so that one does not run into a difficulty which has been experienced over there in a couple of instances, in which the anesthesia has been carried to such an extent that the operation was impossible; it was like operating on a block of ice. One thing of real interest which has occurred to me as a possible explanation is the fundamental physiology of the anesthesia which is produced. One of the men from Stanford University who has been much interested in this field of physiology can give us a more complete explanation, so I should like to give four hours or more, though there is no clinical proof of such a maximum. After the finger is sutured in place the reduced temperature is still continued for several days but is raised slightly day by day as the nutrition of the severed part improves.

---

[16] Standard, S., in discussion on McKittrick, L. S.: Recent Advances in Management of Gangrene and Infections in Patients with Diabetes Mellitus, Am. J. Digest. Dis. 13: 142-148, 1946.

[17] Allen, F. M., and Safford, F. K.: To be published.

[18] Fay, T.: Pennsylvania M. J. 46: 332-333, 1943.

The experimental restoration of entire limbs was demonstrated by Blakemore and co-workers,[13] who cut off dogs' legs, kept them in a refrigerator for twenty-four hours and then replaced them, with successful healing. Since animals' legs have survived after having been deprived of circulation by a tourniquet for fifty-four hours and tails similarly for ninety-six hours, the feasible limits of preservation of severed limbs may well exceed twenty-four hours. If a limb is fairly cleanly amputated, for example in a sawmill accident, there is a challenge to any nearby physician to pack such a part in ice and send it along with the patient to a hospital equipped for the necessary anastomosis. In this airplane age it is surprising that no attempts of this kind have yet been reported. A commoner type of case is the wounding of limbs in various ways which sever the main blood vessels but leave other connections with the body. Amputation is the established routine, but it is entirely practicable for such a patient to be transported long distances with the damaged part surrounded with ice or ice bags, and considerable gaps in the blood vessels can be bridged by the recent methods of anastomosis. Nothing is risked or lost, and even if there is failure in a majority of cases a minority of successes will justify the attempt.

ORTHOPEDIC OPERATIONS UNDER REFRIGERATION ANESTHESIA

Case 1.—A man fell in the street, sustaining a compound fracture dislocation of one ankle. He was treated elsewhere, and one month after the accident he was admitted on the service of Dr. Charles Murray Gratz in City Hospital. Examination showed a compound fracture dislocation of the right tibioastragalar joint, with osteomyelitis, and a complete tear of the internal lateral ligament. In an operation with the part under refrigeration with a tourniquet, continuous traction was put on the misplaced foot; scar tissue of the inner mortis of the ankle was left intact but the periosteum on either side retracted; the fibrous tissue of the inferior portion of the ankle was carefully dissected and the entire dislocation placed in extreme abduction. A Lane bone skid being used the reduction was accomplished without difficulty. With plastic reconstruction of the lower end of the tibia, the upper portion of the astragalus was made into a "V" to fit the mortis in the tibia. Two wires were then used to hold the desired position. A catheter was placed in the bottom of the wound, covered by a penicillin dressing, and the wound was packed with petrolatum and closed with two retention sutures. A cast was applied from the toes to midthigh.

There was no pain or discomfort in the operation; the relaxation of the parts was complete, and when the tourniquet was removed the circulation of the foot returned promptly. The subsequent recovery was uneventful, without sign of harm from the low temperature or the tourniquet.

Case 2.—A 44 year old man fell, fracturing the right femur at the site of chronic osteomyelitis of twenty years' duration. He was treated elsewhere and was admitted to Dr. Gratz's service nine months after the accident. Roentgenograms showed transverse and comminuted fractures with decided angulation and a Lane plate separated from the fragments, three screws still in the plate and two screws in the soft tissues. The plate and screws were removed and the fragments routinely treated. Four months later, with the part under refrigeration anesthesia, a 35 cm. intramedullary nail was introduced, which held the fragments in correct alinement. Roentgenograms taken five months later showed good position and moderate callus. There was a shortening of 3 inches (7.6 cm.).

INCIDENTAL DEDUCTIONS

Our former papers have mentioned that the customary treatment for hemorrhage in a limb, namely, application of a tourniquet and release of it about every half-hour, is by no means harmless to tissues, especially if they are wounded or potentially infected. Refrigeration permits application of a tourniquet for much longer periods and with much less harm. It is becoming accepted that every asphyxiated limb should be kept at the lowest possible temperature short of freezing. If actual refrigeration is not available, any other means of cooling, by air current, water, alcohol and similar means, are helpful in proportion to the degree of reduction of temperature.

We have also mentioned previously the absence of any clinical signs of harm from either the cold or the tourniquet in our operations and also that repeated microscopic studies of the amputated limbs have shown no detectable alterations of any tissues from skin to bone marrow. Such specimens, however, show only the conditions during the chilling, not the after-effects; also they do not include the tourniquet zone, where the direct pressure is likely to produce the maximum injury, especially on blood vessels and nerves. To cover this point the following clinical experiment was performed in cooperation with Dr. J. R. Lisa, the hospital pathologist. In a patient scheduled for an amputation low in the thigh, a tourniquet was applied distal to the proposed incision in the skin, and the limb was thus refrigerated for twenty-four hours. A tourniquet was then placed on the upper thigh, with the usual three hours of refrigeration for anesthesia. The first tourniquet was left in place, making twenty-seven hours of tourniquet pressure with ice pack. Examination of the amputated limb then revealed no detectable microscopic changes in this zone of twenty-seven hour pressure or proximal or distal to it. We therefore see no reason to fear this pressure for the usual period of three hours or less.

For anybody who still has fears, compromise methods are available. If there is fear not of cold but of the tourniquet, there is the possibility of good anesthesia without a tourniquet,[14] provided the blood flow is scanty on account of arteriosclerosis or other lesions. If the long application of the tourniquet invites criticism, there is the previously demonstrated possibility [3] of changing the position of the tourniquet every hour or half-hour, with an interval of five or ten minutes of free circulation each time. If the refrigeration is continuous this plan makes only a slight delay in obtaining satisfactory anesthesia, even in limbs with a normal supply of blood. If there is fear of the prolonged low temperature, it has been found [15] that fair anesthesia is provided by temperatures as high as 60 F. Therefore the time of refrigeration of a limb can be shortened, or prolonged cold can be applied on deep locations, such as the hips or trunk, where use of a tourniquet is impossible, with the understanding that some infiltration of procaine hydrochloride will be necessary when the deep nerves are reached. One of us (L. W. C.) was thus able to cut through the layers of a thick abdomen down to the peritoneum, which proved sensitive. Partial anesthesia for a hip joint operation was mentioned previously.[3]

---

[13] Blakemore, A. H.; Lord, J. W., and Stefko, P. L.: Ann. Surg. **117**: 481-497, 1943. Blakemore, A. H., and Lord, J. W., Jr.: Nonsuture Method of Blood Vessel Anastomosis, J. A. M. A. **127**: 685-691 (March 24), 748-753 (March 31) 1945.

[14] Cayford, E. H., and Pretty, H. G.: Ann. Surg. **121**: 157-163, 1945.

[15] Safford, F. K., Jr., and Nathanson, M. B.: Clinical Observations on Tissue Temperatures, Arch. Surg. **49**: 12-22 (July) 1944.

The dwindling attacks against refrigeration can now be answered in two ways.

First, mortality figures are not a sole criterion of surgical skill. Surgeons of unquestioned standing have reported high mortality rates in series of amputations, and many of them have testified that the number of these deaths has been reduced by refrigeration. Phenomenally low mortality rates furnish no evidence that any surgeon dealing with such favorable material could manage the worst cases of a large public hospital with equal success or without the need for refrigeration. As we have mentioned elsewhere, our mortality rate from only one complication, namely, heart disease, during the several weeks following amputation is greater than the total mortality rate of these critics. Also the lowest mortality rate is too high if it can be reduced, and there is reason to believe that refrigeration used in the few desperate cases in these select series would save some lives, just as it has in the experience of other surgeons.

Second, we may revert to the stated facts, e. g., that animals' legs have survived application of a tourniquet and refrigeration for fifty-four hours, that vascular anastomosis and replacement of dogs' legs have succeeded after amputation and refrigeration for twenty-four hours, that human amputation wounds have healed in areas that had been iced for from two to four weeks and that a mangled hand can be reconstructed after refrigeration for two weeks. These facts, verified from many sources, permit judgment of assertions made without any proof (e. g., by Standard[16]) that two or three hours of refrigeration anesthesia gravely injures tissues and also makes them unfit for the delicate hemostasis which distinguishes his amputations. All such statements imply that the method has not been learned and that perhaps freezing has occurred, since all surgeons who have used the method correctly can corroborate the proofs that the cold tissues are absolutely unchanged in consistency and are fit for the most painstaking surgical procedures. Also one of us (F. M. A.), in many years of experience, has never encountered a surgeon who did not reject some patients with gangrene as inoperable, until with the advent of refrigeration we have operated on every patient regardless of condition; some statistics may thus be explained.

FURTHER DEVELOPMENTS

Cold has the unique ability to inhibit simultaneously pain, shock, infection, toxic absorption and tissue devitalization. Speaking always of emergency treatments at temperatures above freezing, we can state the general rule that the lower the temperature, the greater is the effect. Among the results of our recent experiments on animals[17] are the three following effects:

1. *Shock.*—While all writers now agree on the value of reduced temperature in shock, the prophylactic effect is still greater than the therapeutic effect. Fay[18] first introduced systemic hypothermia in shock treatment, but there is no record of his having used it prophylactically in operations. Our experiments show that while body temperatures of 80 F. or lower are not so powerful as the near-freezing temperature of local refrigeration the inhibition of shock is nevertheless striking. This fact may have occasional surgical application; for example, in the case of a desperately injured patient requiring a double hip disarticulation which would ordinarily be fatal. The recommended procedure then would be to apply ice to the hip region for the utmost local penetration and, at the same time, with the patient under sedation allow the general body temperature to fall to about 80 F. In this way the operation can be performed with remarkably little shock and also with minimal need for anesthesia.

2. *Abdominal Operations and Injuries.*—Preservation of tissues by reduced temperature is universal throughout the body, but the inhibition of shock is not universal. Reduced temperature is found to be not helpful, in the sense of either prophylaxis or therapy, for shock from intestinal trauma, and therefore the aforementioned systemic hypothermia cannot be recommended for abdominal operations. This new differentiation between forms of shock may have wider theoretic significance.

3. *Burns.*—The superficial location of burns makes them accessible to temperature treatment, and they preeminently need the combined inhibition of pain, shock, infection, toxic absorption and tissue devitalization. The usual inertia of authorities has delayed the adoption of this treatment for several years, but any intelligent trial of local refrigeration will prove its dramatic benefits. The possibilities of systemic hypothermia for the most extensive burns will be discussed elsewhere.

CONCLUSIONS

1. Experience to date continues to confirm the safety and benefit of refrigeration anesthesia.

2. Not only is this anesthesia by brief chilling advantageous for orthopedic and reconstructive operations, but also successful healing has been reported in limbs which have been refrigerated for a number of days or weeks. Besides clinching the harmlessness of the low temperature, these observations point the way to new developments in surgery.

3. Recent experiments define some limitations and also extensions of hypothermic treatment. They suggest uses of reduced temperature prophylactically in some operations involving shock and therapeutically, especially for burns.

133 East 58th Street—1031 Fifth Avenue.

ABSTRACT OF DISCUSSION

Dr. Bruce M. Anderson, Oakland, Calif.: There is no doubt of the value of this procedure. I want to offer one note of caution from what I have observed in the practice in Oakland, i. e., that care should be taken in the giving of anesthesia, that the complete equipment is available and that well trained personnel are on hand, so that one does not run into a difficulty which has been experienced over there in a couple of instances, in which the anesthesia has been carried to such an extent that the operation was impossible; it was like operating on a block of ice. One thing of real interest which has occurred to me as a possible explanation is the fundamental physiology of the anesthesia which is produced. One of the men from Stanford University who has been much interested in this field of physiology can give us a more complete explanation, so I should like to give some of my time to Dr. John Field, who will give us a brief explanation of the oxidation and fermentation that goes on, which may explain some of the anesthesia that we get by refrigeration.

---

[16] Standard, S., in discussion on McKittrick, L. S.: Recent Advances in Management of Gangrene and Infections in Patients with Diabetes Mellitus, Am. J. Digest. Dis. **13**: 142-148, 1946.

[17] Allen, F. M., and Safford, F. K.: To be published.

[18] Fay, T.: Pennsylvania M. J. **46**: 332-333, 1943

Professor John Field, Stanford University, Calif.: It is amazing how much cold mammalian tissues will stand after isolation and under the experimental conditions which make the supply of oxygen and the removal of carbon dioxide easy. Slices of the cerebral cortex of a rat may be maintained at a temperature of about 0.1 or 0.2 C. for as long as an hour. On rewarming they will recover completely their capacity for oxygen consumption and for glycolytic reaction. We do not know whether other functional activities would be restored, but insofar as the metabolic picture is concerned a complete restoration of the capacity for glycolytic reaction and capacity for oxygen consumption occurs after as long as an hour at more than 0.1 C. This is a far lower temperature than the rat can stand. The intact animal dies at 10 or 11 or 12 C. body temperature, because of the failure of the great supply systems, the circulation and the respiration. If by means of what amounts to artificial circulation and respiration in this particular type of study one maintains a suitable supply of oxygen, the tissues can stand a good deal more lowering of temperature, and this leads to a speculation that has been of interest to me. If tissues, even mammalian tissues, can stand such little temperatures as this, what can be thought of as constituting life? If it is taken to extremes, certain protozoa and certain bacteria have survived temperatures as low as the temperature of liquid helium, —272, and it is not an overstatement to say that little is going on chemically at such temperatures as this; yet under these conditions these cells survive for a more or less indefinite time. It looks as though life fundamentally is a sort of molecular pattern. It does not depend on continuance of chemical reaction, certainly not at great speed, but if the temperature is such that the compounds present in the cell—proteins, carbohydrates, fats and other materials—are all the time breaking down, so that the metabolism is going on at the higher levels of temperature, then the reactions are essential. So the survival of the cell at —272 merely implies that the reactions which take place are not always recoverable. It is a rather striking point and one which serves to emphasize the fact that harm done to a cell by interference with the energy-building reactions, oxidation and fermentation does not occur if at the same time the over-all chemical metabolic picture is also reduced, that is, if the temperature is dropped so that these reactions will go down together. This affords a rather strong rationale for the use of refrigeration anesthesia and chilling processes for the preservation of tissue. Again we have this overall reduction on the application of cold in contrast to a probably somewhat distorted metabolism of the cell as a result of interfering with metabolic processes by means of this or that pharmacologic lesion.

Dr. Stephen Holstein, New York: During the war, while I was in the Pacific, I saw a patient who presented a rare syndrome, only 2 cases of which have been reported. There was paralysis of the anterior group of muscles of the leg, secondary to an acute spasm of the anterior tibial artery. A sympathetic block was done in an attempt to restore vasodilatation, but apparently in an area of reduced supply of oxygen the smooth muscle of a vessel wall remains in spasm under reduced oxygen content, because its requirement is less than that of the surrounding tissue. This young man went down hill. A biopsy specimen of the lower portion of the anterior tibial muscle was taken and on microscopic section it was found that the striations had disappeared but the nuclei remained in place. The part was refrigerated all the way up to the hip for one week, and there was progressive increase in the amount of destruction, so that the next step my associate and I were forced to enter on was a complete block resection of the anterior tibial muscle group. We had originally planned to go into the area with the idea of removing the entire section of the artery involved, in the hope that with the removal of an artery in spasm the remainder of the arteries might relax sufficiently in order to produce some circulation under decreased temperature of refrigeration to save this man's leg. After getting in there, we realized that the entire muscle group was now completely degenerated and that section of the artery itself would not be sufficient, so we removed the entire area. I want to ask why the failure of reduced oxygen consumption occurred in the presence of this icing that we administered? Is it possible that icing in a diseased state of a vessel will be of no avail, or do you think that we can still hold out hope for a condition of this sort, of acute arterial spasm, using refrigeration with the hope that by gradual defrosting the limb can be saved? The most rapidly degenerating part occurred during the defrosting stage. His condition was much worse than it had been prior to the administration of any ice at all.

Dr. H. H. Stryker, Kalamazoo, Mich.: It occurred to me during the war that the operating time and the shock to the patient might be cut down by taking the graft ahead of time. My colleagues and I did this in 6 cases under refrigeration anesthesia, taking a tibial graft. Technically, it is nice; it gets away from the uncomfortable position of the patient necessary if taken at the time of spinal fusion. However, we did get some weakness in these legs afterwards. Most of this was temporary and cleared up rapidly, but in 2 cases the patients had a foot drop, which persisted for an uncomfortable period but eventually cleared up. Up to this time, which is about a year and a half or two years since the last was done, there have been no residual paralyses. I am not sure of the cause of the paralysis and the weakness, whether it is due to the cold or due to the application of the tourniquet at the time of refrigeration. Since only the anterior groups seemed to be involved, I think that perhaps it was due to the pressure of the peroneal nerve just above the knee, where the tourniquet was applied. I do not know whether any one else has had this experience. Perhaps with a different type of tourniquet, with the air pressure varied or better controlled, this might be a better type to use to avoid this paralysis. We used an ordinary flat rubber tourniquet about 1½ inches (3.7 cm.) wide about three turns around, using it a good deal as in cases of amputation.

Dr. Lyman Weeks Crossman, New York: I am interested in Dr. Anderson's remarks about the block of ice, because McElvaney uses the block of ice definitely. If there is an extensive infection and he thinks that the patient's condition is such that there must be an amputation but the patient's general condition will not permit any sort of operative procedure, he actually will freeze the part so hard that it feels as though it were marble. He says that he feels as though he could chip it with a chisel. In other words, he does a physiologic amputation by means of the block of ice. We advocate 40 degrees, which is 8 degrees above freezing. A near-freezing temperature might produce a frostbite, and primary healing is not possible after frostbite. Some doctors report that they do not get primary healing. This may be due to the choice of level for the amputation—where there is insufficient circulation for healing or the temperature of the part has been too low, possibly where there is a breach in surgical technic or where infection is present in the stump at the time of operation. I was much interested in Professor Field's talk on physiology. We know that the metabolism of the part is reduced tremendously, and we count on that, because as long as we can keep the metabolism at its low ebb, with the cells in a state of suspended animation, we know that the patient will not suffer from that part. There can be no shock, and there can be no spread of infection or absorption of toxic material. If we keep the temperature at 40 F. the patient will have no pain. When there is no pain the temperature is elevated. Usually at 60 or 65 F. there is a return of definite metabolic processes which will permit healing. Originally we removed the sutures on the seventh day, but on the eighth day there was a gaping of the edges of the skin. We realized that the low temperature had reduced the metabolism and healing power, and the part could not heal in seven days. Now sutures are removed on the twelfth or fourteenth day, and there is firm healing. In Dr. Holstein's case the pathology was probably present in the artery and the damage was complete before the refrigeration began.

Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association
and Hygeia, the Health Magazine
Chicago

(*Continued from page 318*)

(Note.—*Following is the fourteenth chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of The Journal. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in The Journal. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—Ed.)

CHAPTER 14. *Confusion and Strife*

1890-1894

1890

NASHVILLE

The bound volume of The Journal for the period January to June 1890 contains a list of editorial writers; these no doubt contributed some of the scientific editorials as well as those having to do with the work of the organization.

S. T. Armstrong, U. S. Marine-Hospital Service.
Robert H. Babcock, Chicago.
Henry T. Byford, Chicago.
Archibald Church, Chicago.
J. C. Culbertson, Cincinnati.
Nathan S. Davis, Chicago.
Richard J. Dunglison, Philadelphia.
James M. French, Cincinnati.
Albert L. Gihon, medical director, U. S. Navy.
Junius C. Hoag, Chicago.
John H. Hollister, Chicago.
Bayard Holmes, Chicago.
W. W. Jaggard, Chicago.
Samuel J. Jones, Chicago.
Charles Lodor, Chicago.
Franklin H. Martin, Chicago.
L. L. McArthur, Chicago.
Harold N. Moyer, Chicago.
Wolfred Nelson, New York.
John Shrady, New York.
William L. Worcester, Little Rock, Ark.
Richard M. Wyckoff, Brooklyn.

Here are such distinguished names in the history of the Association as J. C. Culbertson, John H. Hollister and N. S. Davis, all of whom served as editors of The Journal. They aided with the editorials on the work of the Association.

The Journal for May 3, 1890 contains a review by James E. Pilcher, assistant surgeon in the United States Army, of "The Annals and Achievements of American Surgery." The review is especially important because it established the place that American surgery was to occupy in the development of surgery throughout the world. Pilcher gives credit to Dr. Philip Syng Physick of Philadelphia for the foundation of American surgery, calling him the father of American surgery. Then came the famous Valentine Mott of New York, whose name is still preserved in the annals of the great metropolis. Indeed, there is a special society dedicated to his memory. Pilcher recorded the great achievements of surgery in the history of American medicine; his review must have taken many hours of research into medical literature. He concludes concerning the American surgeon that "his brilliancy and force as a teacher, his originality and skill as an operator, and his grace and impressiveness as an author have united to secure the high position accorded to him by other nations." The history of the growth of medicine in our modern times reveals the rise of American surgery to great eminence, to leadership throughout the world. But some of the greatest names of those who built American surgery had not yet begun to appear in the Transactions of the American Medical Association!

With May The Journal of the American Medical Association issued the special edition which had now become a feature in American medical publishing. This issue, which forecast the program of the convention, was placed in the hands of every regular registered physician in North America. It was made the occasion of still further promotion of The Journal to the medical profession. The editors took great pride in pointing out that the weight of the paper of the special issue amounted to fifteen and a half tons.

The Rush monument was still not doing well; the collection had just barely gone beyond $1,500, and it seemed that the minimum cost would be not less than $15,000.

PLANS FOR THE CHICAGO WORLD'S FAIR

At this time The Journal was agreeably surprised to read in the *Cincinnati Lancet Clinic* that a world's fair was to be held in Chicago in 1893 and that it might be a good idea if the American Medical Association, which had always "made Chicago its center," took the leadership in planning an exhibit for demonstration to the public of the great advances that medical science had made during the years. This occasion might serve "to bring into closer relations with us the medical fraternity of Central and South America."

THE NASHVILLE MEETING

The meeting convened in Nashville, Tenn., near the end of May. The President's address, which had been printed in the issue published during the week of the annual session, was a review of the relations of medicine to public health. The President recognized the desirability of representation by the public on state boards of health and he urged strongly a wider extension of public health activities.

There had been much gossip in various portions of the country during the year on the necessity for reorganization of the American Medical Association.

The committee on the Rush monument suggested that failure of the appeal to the general medical profession should probably yield to a specific appeal to a few leading members. If this appeal failed, it would probably be better to determine "whether the memorial shall be the imposing one your committee have in view, or such humbler testimonial as the money they then have in hand shall justify them in obtaining."

The Board of Trustees reported that The Journal had been under the direction of the committee on management. It now had a weekly circulation of 5,100 copies, with its own printing office. An editor had not been named, but one of the members of the committee on [illegible]ently Dr. John H. Hollister of [illegible] had been filling this function. A resolution came from Ohio for the appointment of a special committee of one from each state to consider The Journal and to see what could be done to superintend its editorial management and to widen its circulation. This resolution was laid on the table, but it was an indication of *underlying dissatisfactions* which were to come to a focus later in the year.

There were other political dissatisfactions which became manifest. A resolution was offered to the effect that "at future meetings of this Association, the business of the general sessions shall be conducted from the floor of the house, and no one occupying a seat on the platform shall be recognized by the President, excepting the secretary." This resolution was adopted.

An attempt was made to pass a resolution making every medical society with a membership of more than a hundred a branch of the American Medical Association, but the resolution failed.

CHICAGO OR WASHINGTON

The Journal began to reflect increasingly in its editorials its feeling of unrest. The New York State Medical Society had reorganized under a representative system in which the various divisions of the state society were directly related to the society itself. Now for the first time appeared the suggestion that "our *local societies could be represented by delegates in the* state societies, and these, in like manner, in the national Association."

Suddenly in December an announcement appeared in The Journal to the effect that the Board of Trustees had held a special session in Washington, D. C., to consider whether or not The Journal should be moved to Washington. Six of the Trustees were present. The first point raised was that Dr. John H. Hollister, while [illegible]ing as supervising editor, had been receiving $250 a month, a fact which did not appear anywhere in the minutes of the organization. The secretary pointed out that he had no record of any meeting of the board at which such an action was taken. The chairman of the committee on management stated that no meeting of his committee had been held. At the afternoon session Dr. I. N. Love, chairman of the board, recommended removal of The Journal to Washington. There was much discussion, and it was decided to put the matter before the members of the Association. Finally a group were constituted a committee to prepare a resolution, which read:

> *Resolved*, That the sense of the Committee be that the home of The Journal of the Association should be permanently at Washington, D. C.
>
> *Resolved*, That the Trustees incorporate the foregoing resolution in their report to be presented at the next meeting of the Association.

A resolution was then offered by John V. Shoemaker that the Trustees "recommend the members of the Association, or the various state and local medical societies in affiliation with the Association, to contribute or subscribe funds for the erection of a permanent building as a place of meeting as well as a library and office for the American Medical Association."

The Trustees recommended that these resolutions be printed in The Journal and that members be given opportunity to discuss the subject, with, however, a limitation of individual letters to fifteen lines. Then Dr. Hollister was instructed to make such contracts as might be necessary for the continuation of The Journal until the next meeting of the Association, and the Board of Trustees went off to pay a visit to the President of the United States.

1891

WASHINGTON, D. C.

Something happened by the time the next volume of The Journal was published; it bears on its title page the name of J. C. Culbertson as editor and the announcement, a little further along, that J. C. Culbertson is editor and manager.

In the first number for the year the correspondence began with a highly amusing combination of three letters, the first of which, from a doctor in Texas, suggested that The Journal remain in Chicago; the second, from a doctor in Tennessee, that it be moved to Louisville, and the third, from a doctor in Iowa, who wondered what "occult reason or grounds" demanded removal of The Journal since the objections to its removal were so strong.

The Journal began begging for more contributors to this debate, because it was apparently of little interest to the medical profession as a whole. By the middle of January there were seven letters—six for Chicago and one for Washington—and in the next issue nine letters (all for Chicago) and one indicating that apparently a little faction was having a whim in the matter that should not too greatly disturb the majority. The last issue for January turned up with three pages of letters, including among the contributors such distinguished names as William T. Corlett of Cleveland, who simply said "I prefer Chicago," and Henry O. Marcy of Boston, who had about 1,000 words on the subject. Marcy went directly to the point. He felt that the agitation for removal was simply that of one trustee who voted for it because he was pledged to that course of action before his appointment. "Why," said Dr. Marcy, "this agitation for Washington? Is it because Washington is the capital city and the center of the political influences of our country? Some have felt that already the greatest danger to our Association and its journal lies in the fact that a political element has entered into its organization and is seeking control. If there is reason for apprehension in this direction, it would be a strong argument for its removal *from* Washington had it been established there instead of at Chicago."

Dr. Solomon Solis-Cohen of Philadelphia contributed 1,000 words in which he said that The Journal had not been well edited, that there would be less tendency in Washington to debase The Journal into a local organ, that America must have a scientific center and that there could only be one center and that was Washington. He argued that any defects in The Journal were not those of the editors, since they were all first class scientists and that therefore they must be due to the location.

The battle waged through issue after issue, seldom with less than ten letters in each number of The Journal. Dr. Harold N. Moyer of Chicago made it his special task to answer Dr. Solomon Solis-Cohen. He pointed out that if there was any peculiar miasm around Chicago it probably prevailed equally around Philadelphia, New York, Boston and Baltimore. He congratulated the profession of Washington on being free from this kind of infection. He wrote sarcastically: "As near as we can analyze Dr. Cohen's statement, there seems to be in Washington a great, intangible, psychic entity that has its being as an incorporeal body working in and for the good of the but not of it, for they are of the earth, and this is of the spiritual and invisible." And very succinctly Dr. Moyer pointed out that if there was anything to be done about improving The Journal it would have to be done through brains and not through transferring the "editing, printing, press-work or binding to either Washington, Oshkosh or Kalamazoo."

The letter of Dr. Solomon Solis-Cohen served to focus the attack on him and to arouse to the defense of Chicago so many that he well nigh defeated the cause by his advocacy of it. On another occasion a similar bitter attack was to gain him overwhelming support. But this time it concerned his attack on proprietary medicine.

By the end of February medical societies were beginning to take action; first was the Chicago Medical Society, which opposed the removal vigorously. A long letter from Charles A. Hough of Ohio began with the statement that Washington had never produced a medical journal, national either in character or in reputation, and that was the very reason "why she is just the place which *can* do it." They then poured satire on the proponents of the removal to Washington and particularly on Dr. Solomon Solis-Cohen. The correspondence is typical of the personal journalism of that period. Dr. Hough feared that there might be infection of the new magazine by the pathogenic germ of the Congressional *Globe*.

A New York physician, Dr. Thomas H. Manley, said that it was for The Journal to lay plainly on the table the reasons underlying the demand for removal, for "it may as well be generally known that this transference of location cannot be consummated *except through specious, delusive argument, wily manipulating and shrewd diplomacy, with the aid of sharp parliamentary tactics.*"

The letters continued issue after issue, the vast majority of them opposing any removal to Washington and many beginning to inquire more and more into the motives. More societies began introducing resolutions. The presidents of state medical societies began recording themselves in behalf of maintaining the headquarters office in Chicago. Then the suggestion began to be made that the whole question be referred back to the Board of Trustees. Many an important leader in medicine contributed his personal sentiments to the controversy. A leader in American medicine of that day, Dr. Cornelius G. Comegys of Cincinnati, wrote a most enlightening communication of several thousand words in which he made it clear that The Journal would have to have a full time editor. He pointed out some other objectives, one of them a full time secretary of public health in the President's cabinet. To him the *British Medical Journal* was the ideal that should be followed, but he felt that there was something about Washington that would do more for The Journal and the Association than seemed apparent. "If its great purpose can be accomplished in Chicago, let it remain; but, I repeat, the consciousness of Chicago is so immensely inferior to that of our political capital that I hope that all of us may see that the great destiny of the Association may more surely be accomplished at Washington."

Nicholas Seen, who was then in Milwaukee, asserted that a vote of the membership would show at least nine out of ten favorable to Chicago. Dr. T. D. Crothers of Hartford, Conn., warned that removal to Washington might destroy the publication and the Association. A few voices continued to echo the advantages of Washington, but by far the majority were now fully committed to remaining in Chicago. Dr. R. Harvey Reed took another hand in the battle in order to reply in extenso to Dr. Comegys; he continued to insist that there were hidden evil forces behind the movement to get The Journal to Washington. In fact he felt that there was a federal marasmus that is destructive of anything that gets into the nation's capital. He pointed out that the *Index Medicus* was published not in Washington but in Detroit and he announced that private business enterprises which were run on business principles stayed out of the national capital.

The editors of The Journal in the issue for April 4, 1891 began quoting editorial opinions from other medical periodicals; apparently the great majority of the leading medical publications of the country were convinced that Chicago was the desirable place for the publication.

The Board of Trustees met in the Arlington Hotel in Washington on Saturday, May 2, 1891. A questionnaire had been sent by Dr. R. H. Reed of Mansfield, Ohio, aided by T. D. Crothers, C. D. Beardsley and John F. Fulton of St. Paul. This questionnaire showed an overwhelming majority in favor of retaining the periodical in Chicago, actually a vote of 10 to 1, and E. D. Moffett of Indianapolis shouted in his letter "Remove The Journal to Washington—No. Remove Washington to The Journal."

The House of Delegates assembled in Washington, D. C., May 5. Immediately following the president's address the Board of Trustees made a preliminary report on the question of locating The Journal. They felt that there had been undue excitement, that sectional antagonisms had been engendered and that efforts had been made in stimulating the interest of lukewarm members.

The Board of Trustees on the second day of the session made an additional report. In this they pointed out that the editorial management of The Journal had continued as before, that the resident members of the Board had acted in the capacity of supervising editor, that they hoped to secure a building for the Association and that in view of increased funds they hoped to raise the professional and literary standards of its editorial department to the equal of any.

A special committee reported on the desirability of a cabinet appointment of a secretary of public health.

A resolution commended Dr. Hollister and the business manager, J. Harrison White, and recommended that they be employed for the ensuing year. It was considered, however, that this would not be mandatory on the Board of Trustees.

A committee was appointed to look into the question of incorporating the American Medical Association and to report in the following year.

Thus the furor over the transfer of The Journal from Chicago to Washington died without any battle in the House of Delegates. The ventilation of the subject in the columns of The Journal and the questionnaire to the membership by those opposed to the removal had been sufficient to settle the issue.

MEDICINE IN THE PRESS

Almost as if it might have been written yesterday are the following words from an editorial in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, July 4, 1891:

> It is apparent to even the careless reader of the daily papers that medical topics are receiving vastly more attention than ever before. It is even hinted that many large daily papers have a medical man on their regular staff; if such is the case they have generally succeeded in concealing the fact by displaying a phenomenal ignorance regarding medical subjects.

This was in connection with an article on the Keeley cure.

ELECTROCUTION

Early in July 1891 there occurred the first four executions by electricity in Sing Sing Prison. They were most satisfactory, at least to the observers, who said that death was instantaneous and painless in each instance. The doctors congratulated the warden and announced that this was unquestionably a method superior to any other yet devised for the purpose.

THE CORONER SYSTEM

In August 1891 appeared the first essay on the coroner system in the United States. Massachusetts was the first state to get rid of the coroner system and to introduce instead the system of medical examiners. The campaign to eliminate the coroner system is still waged in THE JOURNAL, but legislative bodies are loath to make this revolutionary change.

In his address to the Congress of American Physicians and Surgeons, Sept. 18, 1891, Dr. Claudius H. Mastin made it clear that there was no competition between that organization and the American Medical Association. He paid tribute to Samuel David Gross, who had participated greatly in the work of the American Medical Association and who was the founder of the Congress of American Physicians and Surgeons.

In the issue in which he published the proceedings of the American Congress, the editor of THE JOURNAL congratulated its readers on having such a good magazine.

ANDROLOGY BECOMES UROLOGY

About this time the urologists in the American Congress of Physicians and Surgeons constituted themselves into a section on andrology, which was to be contrasted with gynecology. The editor of THE JOURNAL felt that there was no future for this specialty as long as the general practitioners felt themselves competent to treat these cases.

1892

DETROIT

The periodicals provide the detail of thought and philosophy that prevail in any period. Thus an examination of the pages of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for the first half of the year 1892 indicates that the publication was being edited by J. C. Culbertson and that he was helped with editorials by Drs. W. S. Christopher, Chicago; T. D. Crothers, New Haven, Conn.; C. A. L. Reed, Cincinnati, and R. M. Wyckoff, Brooklyn.

THE BUSINESS COMMITTEE

Resolutions were proposed several months in advance of the session eliminating the committee on necrology and making the publication of obituary notices the duty of the editor of THE JOURNAL.

Dr. J. C. Culbertson proposed that all business matters of the Association be referred without discussion or comment to an executive committee composed of two members appointed by each state society in affiliation with the Association who should carefully consider and recommend such action as they might deem most advisable. This movement was to culminate in the system of reference committees which has been a feature of modern activities of the House of Delegates of the Association. Through the reference committees any member of the Association has opportunity to appear and express himself before final action is taken on any matter of significance.

POLIOMYELITIS

In 1891 Medin of Stockholm had reported an epidemic in which within five months 44 cases were observed in previously healthy children of a form of paralysis. This was one of the first great outbreaks of infantile paralysis definitely recognized as such; Dr. C. H. Hughes of St. Louis insisted in THE JOURNAL that it must be a form of grip.

THE DEPARTMENT OF HEALTH

Again and again during this year the medical profession was cheered with the belief that legislation would finally pass for the establishment of a department of public health in the cabinet. The measure had been introduced by Senator Sherman. THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION had urged all medical societies, individual physicians and others to write to their senators and congressmen and to their special committees urging the passage of this legislation. It was felt that a strong response by the medical profession would ensure passage.

BEHAVIOR PROBLEMS IN THE HOUSE OF DELEGATES

In this period other problems of behavior had to be considered. Dr. Brodie of Detroit offered a resolution permitting the placing of books and other advertising sheets on the seats of members of the American Medical Association when they met in their annual session. This resolution was further amended by Dr. John H. Hollister, who requested that all material be protected by copyright in order to prevent pirating by other professions and other organizations. The first proposals for copyright had been made at the meeting in Nashville in 1890 and now came to fruition.

By this time also THE JOURNAL began urging doctors to bring their wives along to the annual session; the editor pointed out that if a member once did this he would never have another chance to go alone.

FOOD AND DRUG LEGISLATION

In this year also came the first proposals for suitable food and drug legislation to prevent adulteration. THE JOURNAL said that the establishment of a department of health should accompany such a food and drug administration, since under other circumstances it would have to go into the Department of the Treasury. Actually the evolution took just that form. Only in 1947 has a real department been proposed.

THE JOURNAL was having fun editorially with the Ohio legislature, which had rejected an appeal to regulate the practice of medicine in that state principally because it would interfere with itinerant doctors and diminish the advertising receipts of some newspapers.

The Ohio legislature, however, before adjournment did appropriate $5,000 to test the Keeley cure and made itself a sort of committee of the whole to investigate. Each member was to be privileged to send 1 patient to take the cure. Here and there the Keeley cure still raises its ugly head. But in 1947 "The Lost Weekend" and "Alcoholics Anonymous" mingled with psychoanalysis bring new aspects to alcoholism.

In May 1892 it was already recognized that registration of hundreds of doctors at the annual session was becoming a problem, and the proposal for registration by mail won great approval. This procedure was ultimately abandoned, only to be restored again in 1947 because so many thousands of physicians indicated they would attend the Centennial Session.

Toward the end of May the Philadelphia County Medical Society on the insistence of Dr. Solomon Solis-Cohen adopted resolutions urging THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and other leading medical publications to get rid of their proprietary medical advertising. The editor of THE JOURNAL defended the practice and hinted that THE JOURNAL might adopt the rule if the Philadelphia society would make good on the income which would be lost. However, he also defended the advertising of proprietary medicines on the ground that most physicians were prescribing great amounts of these preparations.

At this time American medicine was becoming subject to multiple organizations; the presence of these innumerable bodies was giving great concern to the leaders. In his presidential address Dr. H. O. Marcy of Boston urged that there was a place for all such bodies in American medicine. He emphasized particularly the need for two such groups as the American Congress of Physicians and Surgeons, consisting of organizations of specialists in many fields and of the American Medical Association to represent the great body politic.

THE JOURNAL had now reached a circulation of over 6,000 copies and was beginning to bring some income to the Association. Dr. Marcy traced in detail the development of the movement for a national department of health and expressed the hope that its ultimate establishment was not too far in the future.

At the 1892 session the movement to bring the New York state societies back into the fold culminated with the establishment of a committee for conference; at the same time a resolution was unanimously adopted directing the appointment of a committee to revise the Code of Ethics and the Constitution and By-Laws of the Association.

There was an extensive report by the committee that had been appointed to urge the establishment of a national department of health which ended with a recommendation that the committee be continued. Resolutions were adopted condemning the giving of testimonials for proprietary medical preparations. The committee on the Rush monument reported that the case was not entirely hopeless. It had received an encouraging donation of $300 from the exhibits at Nashville and the total contributions had now reached over $2,100, but it had only $646.81 left in the treasury. The minutes of the Board of Trustees indicate that Dr. Culbertson had been appointed editor on May 13, 1892. The Trustees had investigated the business of the Association and had made some radical changes. There was much correspondence submitted to the House of Delegates relative to incorporation of the Association, but the committee felt that the incorporation should be delayed until further evidence could be assembled.

It need not be thought that the path which the American Medical Association and THE JOURNAL was treading was entirely without obstructions or difficulties. The *New York Medical Journal,* through its editor, was waging a sort of guerrilla warfare. He ridiculed the quality of material brought before the American Medical Association and praised to the skies the societies of specialists. Nevertheless physicians throughout the country defended the American Medical Association on the ground that it was one organization primarily interested in the work of the general practitioner. The editor of the *New York Medical Journal,* although not a member of the American Medical Association, responded with a statement in which he pointed out that the leaders in American medicine did not attend the meetings of the American Medical Association; indeed, the editor of the *New York Medical Journal* felt that the one essential step toward advancement of the Association would be elimination of the entire Code of Ethics. Here came the old argument that a man would be a gentleman without any Principles of Ethics but forgetfulness of the fact that some men who are not quite gentlemen remain within the borders if they realize that there are no means for detection, trial and elimination.

THE JOURNAL was leaning in its content toward surgery; there were many discussions of proper preparation for specialization. While apparently the editors of THE JOURNAL had authority to omit papers without special interest for their readers, one finds innumerable manuscripts coming from the specialized sections so technical in character that they would be of immediate interest only to the advanced specialists in the fields concerned.

The eminent Dr. Keeley noted for his "cure for drunkenness" had arrived in London, and he was suing the *Lancet* and the *Press and Circular* for calling him a mischievous quack.

An unusual experiment was an attempt to transplant the skin of a black and tan dog to the head of a woman who had lost a major portion of the integument of her skull.

The desire to advance medical education was still having some troubles because the state board of health in Illinois was allowing a year of credit for study with a preceptor.

THE JOURNAL began to interest itself in the political aspects of the nation and to ask all doctors to find out where candidates stood on the national department of health issue before voting for them.

The committee on ethics submitted the entire code to the medical profession for criticism and with it the Constitution and By-Laws, asking advice as to how best to bring about the necessary revisions.

For the first time there appeared in THE JOURNAL the name of Victor C. Vaughan, the dean of the Medical Department of the University of Michigan, who wrote on "The Kind and Amount of Laboratory Work Which Should Be Required in Our Medical Schools." The discussion on his paper was extensive. But Bayard Holmes, who led the discussion, devoted his part of it mostly to drawings of histologic sections of the nervous system.

MEDICINE IN THE PRESS

Almost as if it might have been written yesterday are the following words from an editorial in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, July 4, 1891:

> It is apparent to even the careless reader of the daily papers that medical topics are receiving vastly more attention than ever before. It is even hinted that many large daily papers have a medical man on their regular staff; if such is the case they have generally succeeded in concealing the fact by displaying a phenomenal ignorance regarding medical subjects.

This was in connection with an article on the Keeley cure.

ELECTROCUTION

Early in July 1891 there occurred the first four executions by electricity in Sing Sing Prison. They were most satisfactory, at least to the observers, who said that death was instantaneous and painless in each instance. The doctors congratulated the warden and announced that this was unquestionably a method superior to any other yet devised for the purpose.

THE CORONER SYSTEM

In August 1891 appeared the first essay on the coroner system in the United States. Massachusetts was the first state to get rid of the coroner system and to introduce instead the system of medical examiners. The campaign to eliminate the coroner system is still waged in THE JOURNAL, but legislative bodies are loath to make this revolutionary change.

In his address to the Congress of American Physicians and Surgeons, Sept. 18, 1891, Dr. Claudius H. Mastin made it clear that there was no competition between that organization and the American Medical Association. He paid tribute to Samuel David Gross, who had participated greatly in the work of the American Medical Association and who was the founder of the Congress of American Physicians and Surgeons.

In the issue in which he published the proceedings of the American Congress, the editor of THE JOURNAL congratulated its readers on having such a good magazine.

ANDROLOGY BECOMES UROLOGY

About this time the urologists in the American Congress of Physicians and Surgeons constituted themselves into a section on andrology, which was to be contrasted with gynecology. The editor of THE JOURNAL felt that there was no future for this specialty as long as the general practitioners felt themselves competent to treat these cases.

1892

DETROIT

The periodicals provide the detail of thought and philosophy that prevail in any period. Thus an examination of the pages of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for the first half of the year 1892 indicates that the publication was being edited by J. C. Culbertson and that he was helped with editorials by Drs. W. S. Christopher, Chicago; T. D. Crothers, New Haven, Conn.; C. A. L. Reed, Cincinnati, and R. M. Wyckoff, Brooklyn.

THE BUSINESS COMMITTEE

Resolutions were proposed several months in advance of the session eliminating the committee on necrology and making the publication of obituary notices the duty of the editor of THE JOURNAL.

Dr. J. C. Culbertson proposed that all business matters of the Association be referred without discussion or comment to an executive committee composed of two members appointed by each state society in affiliation with the Association who should carefully consider and recommend such action as they might deem most advisable. This movement was to culminate in the system of reference committees which has been a feature of modern activities of the House of Delegates of the Association. Through the reference committees any member of the Association has opportunity to appear and express himself before final action is taken on any matter of significance.

POLIOMYELITIS

In 1891 Medin of Stockholm had reported an epidemic in which within five months 44 cases were observed in previously healthy children of a form of paralysis. This was one of the first great outbreaks of infantile paralysis definitely recognized as such; Dr. C. H. Hughes of St. Louis insisted in THE JOURNAL that it must be a form of grip.

THE DEPARTMENT OF HEALTH

Again and again during this year the medical profession was cheered with the belief that legislation would finally pass for the establishment of a department of public health in the cabinet. The measure had been introduced by Senator Sherman. THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION had urged all medical societies, individual physicians and others to write to their senators and congressmen and to their special committees urging the passage of this legislation. It was felt that a strong response by the medical profession would ensure passage.

BEHAVIOR PROBLEMS IN THE HOUSE OF DELEGATES

In this period other problems of behavior had to be considered. Dr. Brodie of Detroit offered a resolution permitting the placing of books and other advertising sheets on the seats of members of the American Medical Association when they met in their annual session. This resolution was further amended by Dr. John H. Hollister, who requested that all material be protected by copyright in order to prevent pirating by other professions and other organizations. The first proposals for copyright had been made at the meeting in Nashville in 1890 and now came to fruition.

By this time also THE JOURNAL began urging doctors to bring their wives along to the annual session; the editor pointed out that if a member once did this he would never have another chance to go alone.

FOOD AND DRUG LEGISLATION

In this year also came the first proposals for suitable food and drug legislation to prevent adulteration. THE JOURNAL said that the establishment of a department of health should accompany such a food and drug administration, since under other circumstances it would have to go into the Department of the Treasury. Actually the evolution took just that form. Only in 1947 has a real department been proposed.

THE JOURNAL was having fun editorially with the Ohio legislature, which had rejected an appeal to regulate the practice of medicine in that state principally because it would interfere with itinerant doctors and diminish the advertising receipts of some newspapers.

The Ohio legislature, however, before adjournment did appropriate $5,000 to test the Keeley cure and made itself a sort of committee of the whole to investigate. Each member was to be privileged to send 1 patient to take the cure. Here and there the Keeley cure still raises its ugly head. But in 1947 "The Lost Weekend" and "Alcoholics Anonymous" mingled with psychoanalysis bring new aspects to alcoholism.

In May 1892 it was already recognized that registration of hundreds of doctors at the annual session was becoming a problem, and the proposal for registration by mail won great approval. This procedure was ultimately abandoned, only to be restored again in 1947 because so many thousands of physicians indicated they would attend the Centennial Session.

Toward the end of May the Philadelphia County Medical Society on the insistence of Dr. Solomon Solis-Cohen adopted resolutions urging THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and other leading medical publications to get rid of their proprietary medical advertising. The editor of THE JOURNAL defended the practice and hinted that THE JOURNAL might adopt the rule if the Philadelphia society would make good on the income which would be lost. However, he also defended the advertising of proprietary medicines on the ground that most physicians were prescribing great amounts of these preparations.

At this time American medicine was becoming subject to multiple organizations; the presence of these innumerable bodies was giving great concern to the leaders. In his presidential address Dr. H. O. Marcy of Boston urged that there was a place for all such bodies in American medicine. He emphasized particularly the need for two such groups as the American Congress of Physicians and Surgeons, consisting of organizations of specialists in many fields and of the American Medical Association to represent the great body politic.

THE JOURNAL had now reached a circulation of over 6,000 copies and was beginning to bring some income to the Association. Dr. Marcy traced in detail the development of the movement for a national department of health and expressed the hope that its ultimate establishment was not too far in the future.

At the 1892 session the movement to bring the New York state societies back into the fold culminated with the establishment of a committee for conference; at the same time a resolution was unanimously adopted directing the appointment of a committee to revise the Code of Ethics and the Constitution and By-Laws of the Association.

There was an extensive report by the committee that had been appointed to urge the establishment of a national department of health which ended with a recommendation that the committee be continued. Resolutions were adopted condemning the giving of testimonials for proprietary medical preparations. The committee on the Rush monument reported that the case was not entirely hopeless. It had received an encouraging donation of $300 from the exhibits at Nashville and the total contributions had now reached over $2,100, but it had only $646.81 left in the treasury. The minutes of the Board of Trustees indicate that Dr. Culbertson had been appointed editor on May 13, 1892. The Trustees had investigated the business of the Association and had made some radical changes. There was much correspondence submitted to the House of Delegates relative to incorporation of the Association, but the committee felt that the incorporation should be delayed until further evidence could be assembled.

It need not be thought that the path which the American Medical Association and THE JOURNAL was treading was entirely without obstructions or difficulties. The *New York Medical Journal,* through its editor, was waging a sort of guerrilla warfare. He ridiculed the quality of material brought before the American Medical Association and praised to the skies the societies of specialists. Nevertheless physicians throughout the country defended the American Medical Association on the ground that it was one organization primarily interested in the work of the general practitioner. The editor of the *New York Medical Journal,* although not a member of the American Medical Association, responded with a statement in which he pointed out that the leaders in American medicine did not attend the meetings of the American Medical Association; indeed, the editor of the *New York Medical Journal* felt that the one essential step toward advancement of the Association would be elimination of the entire Code of Ethics. Here came the old argument that a man would be a gentleman without any Principles of Ethics but forgetfulness of the fact that some men who are not quite gentlemen remain within the borders if they realize that there are no means for detection, trial and elimination.

THE JOURNAL was leaning in its content toward surgery; there were many discussions of proper preparation for specialization. While apparently the editors of THE JOURNAL had authority to omit papers without special interest for their readers, one finds innumerable manuscripts coming from the specialized sections so technical in character that they would be of immediate interest only to the advanced specialists in the fields concerned.

The eminent Dr. Keeley noted for his "cure for drunkenness" had arrived in London, and he was suing the *Lancet* and the *Press and Circular* for calling him a mischievous quack.

An unusual experiment was an attempt to transplant the skin of a black and tan dog to the head of a woman who had lost a major portion of the integument of her skull.

The desire to advance medical education was still having some troubles because the state board of health in Illinois was allowing a year of credit for study with a preceptor.

THE JOURNAL began to interest itself in the political aspects of the nation and to ask all doctors to find out where candidates stood on the national department of health issue before voting for them.

The committee on ethics submitted the entire code to the medical profession for criticism and with it the Constitution and By-Laws, asking advice as to how best to bring about the necessary revisions.

For the first time there appeared in THE JOURNAL the name of Victor C. Vaughan, the dean of the Medical Department of the University of Michigan, who wrote on "The Kind and Amount of Laboratory Work Which Should Be Required in Our Medical Schools." The discussion on his paper was extensive. But Bayard Holmes, who led the discussion, devoted his part of it mostly to drawings of histologic sections of the nervous system.

1893

MILWAUKEE

A reference to Garrison's "History of Medicine" indicates that the years between 1880 and 1900 were producing many important discoveries throughout the world; those fundamental discoveries are little reflected in the activities of the American Medical Association. True, there were discussions of treatment of diphtheria and of Koch's tuberculin. Lumbar puncture was introduced abroad in 1891, and several years later it had not yet been mentioned in The Journal of the American Medical Association. Particularly was The Journal lagging in its references to fundamental research in the laboratories of the basic sciences: the newer knowledge of bacteriology is little reflected in its pages. Leadership in medicine was still across the Atlantic.

By 1893 fifteen states in the United States had *established medical practice acts requiring examination* of all persons desiring to practice medicine. This movement had been received with favor; it was anticipated that soon all states would adopt such laws. An extraordinary editorial in January 1893 inclined to the view that Cohnheim was wrong in his theory of the cause of cancer and that it must be parasitic in origin.

An editorial early in 1893 indicates that the only way to improve the quality of The Journal is to make certain that members prepare and read better papers. Early in 1893 The Journal felt called on to condemn the House of Representatives for having removed the funds available for the publication of the Surgeon General's Catalogue from the Surgeon General's Library. Unfortunately succeeding congresses have been just as bad or worse. The Library was compelled year after year to move heaven and earth to obtain enough funds to operate the *Index Medicus* efficiently. Eventually the American Medical Association assumed the obligation and since that time has supported this necessary tool to medical research and advancement.

During the early months of 1893 correspondence waged back and forth on the Principles of Ethics. The discussions of the Principles of Ethics were rather one-sided with page after page occupied by some one who signed himself "A Conservative Member." It is difficult to determine with any certainty who this might be; the literary style resembles that of Nathan Smith Davis. The discussions were going on in New York pointing toward a meeting of minds on questions of dispute and it seemed likely that the vagrant members would soon be brought into the fold.

ANIMAL EXPERIMENTATION

About this time also The Journal began its editorials on animal experimentation, being particularly concerned because Lawson Tait in England had decided to side with the antivivisectionists; thus he did harm which many years would not be able to overcome.

As the year went on, The Journal published the new proposed Constitution and By-Laws and the new Principles of Ethics, which were to be the major subject of interest in the annual session in Milwaukee In presenting the revision of the Constitution and By-Laws The Journal urged acceptance of the concept that every member of a state society would be a member of the national organization and that the organization itself would be conducted by a delegate body. A feature of the Milwaukee session was the presence of Mr. Ernest Hart, editor of the *British Medical Journal.*

As correspondence on the Principles of Ethics continued, it became more and more apparent that there was no real reason to depart from Percival's code as it had been adopted by the Association in 1848 except for such minor modifications as needed to be made to meet some changing conditions. Yet some, including Edward Jackson of Philadelphia, felt that the Principles of Ethics were a bar to a real unity of the profession. The publication of the Principles of Ethics had resulted in only twenty letters, most of which dealt with such matters as the patenting of instruments and advertising by members of the profession. The Journal concluded, therefore, that "as the clamor for a change in the Code has not materialized in any widespread expression, and as the silence of 99 per cent of the 7,000 members of the Association ought to be counted in favor of satisfaction with the present status, further and detailed consideration of the proposed amendments might be omitted."

Dr. Hunter McGuire, President of the Association, in his address in Milwaukee, June 6, 1893, felt it desirable that both the Constitution and By-Laws and the Principles of Ethics lie over for a year so that the views of the individual states might be ascertained. He concluded his address by urging again the establishment of a national department of health.

The committee on creating a department of health in the government reported progress, particularly because Grover Cleveland in dedicating the building of the New York Academy of Medicine had made most complimentary remarks about the medical profession.

The Trustees were having a little trouble about publishing The Journal because the Association had adopted a resolution calling attention to the fact that the Code of Ethics prohibits all commendatory mention or reference to secret preparations. The Trustees neatly passed the buck by instructing the editor that "when the editor is in doubt of the character of an advertisement, he shall refer the same to the committee on advertising, and that an advertisement of a proprietary medicine shall be accepted in the discretion of the committee when the proprietors thereof shall furnish the complete formula."

The main business of the session was the consideration of the Constitution and By-Laws, on which there were majority and minority reports. However, the whole procedure had, in any event, to lie over for a full year. The same man who presented a minority report on the Constitution and By-Laws, Dr. Henry D. Didama of New York City, presented a minority report on the Principles of Ethics. The situation was, however, well under control. Debate was stopped by the presentation of a report by N. S. Davis of the committee to confer with committees of the Medical Society of the State of New York and the Medical Association of the State of New York. This indicated that there had been no conferences because it seemed likely the situation was well in hand in New York State.

Eight hundred and sixty-seven physicians had registered at the meeting in Milwaukee. The Journal pointed out that the entertainment had been superb and that the new Pfister Hotel was not surpassed for elegance by any hostelry in any city, being only favorably compared with the princely Waldorf in New York City.

Four new Trustees had been elected, and the editor was not a candidate for reelection, so that his official relation with The Journal ceased with the last issue of June 1893. The editor called attention to the difficulties in maintaining membership in relationship to subscription to THE JOURNAL and also to the need for a new legislative body which would be truly representative. THE JOURNAL was confronted with an enormous list of delinquents. Apparently one member, Dr. R. Harvey Reed, had circulated a letter to all the Trustees and officers in Milwaukee calling attention to the fact that THE JOURNAL was in debt $10,000. This the editor classifies as a "dastardly falsehood," since THE JOURNAL had never been in debt $1 beyond the cash funds in the hands of the treasurer. In leaving, Dr. Culbertson announced that he planned to resume his connection with the *Cincinnati Lancet Clinic* and that his latch string would be out in Cincinnati for all the members of the American Medical Association. Dr. John B. Hamilton, who resigned immediately as Trustee, succeeded to the editorship of THE JOURNAL following the retirement of Dr. Culbertson, who had a long list of editorial contributors, including such distinguished names in the Chicago area as those of Harry Gradle, Bayard Holmes, G. Frank Lydston, Harold N. Moyer and George W. Webster and from outside the Chicago area such men as Hobart A. Hare, G. Betton Massey and Frank Woodbury.

One finds for the first time the name of J. L. Rosenberger Esq. He was for many years responsible for the abstracts of medicolegal decisions, which has come to be one of the most important features in the makeup of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Dr. Hamilton had previously been editor of THE JOURNAL for a brief period; it is not surprising to see that the change in editorship did little toward improving the makeup or quality of the material in the publication.

The preparation of students for entrance into medical schools was still far below the quality needed to ensure culture. Here are a few examples quoted in THE JOURNAL of essays contributed by students immediately following their graduation:

> Treatment of eclampsia: "To keep the patiant from stricking his head or limbs against and place the patiant in a horzontal position to favor respration circulation. Give bromide of potass. to act as a direct sedative or to excite motor susceptibility of the medula oblongata of the nerve centeres and keep perfect qeuiet."
>
> "Cholor infantum is due to a tomen symtom comences with Diarrhea first stools partly soft yet Liquid and stains the clothing a green color with a musty Odor vomiting pain and Rise of temperature and rapid prostration. May efect the brain when the patiant Roles heat and sleep with eyes open give Bromide potass for this first give Hyd chlor mit in small doses every hour and epecac at first and then Bismuth and Shlicylyc acid give stimulent to keep up the strenth."
>
> "In false croup the farinx is not involved there is false membrane we dont get the spasms."
>
> "There are 3 Verietys of pnemonia lobor Lobular interstiscial lobor is where we have all the lobes of the lung involved we have 3 stages. The inflamation extends from below upwards the seat of inflamation is in the alveoli or air vescle. Stage of ingorgement last 24 to 70 days red hepatization 5 days."
>
> "The Teory of diebetis is an cretation upon the floor of the 4th ventrecle, may be do to Violence or High liveing."

Significantly Mr. Ernest Hart before departing for Great Britain gave an interview to the editors of THE JOURNAL in which he pointed out that an increase in the membership of the American Medical Association would automatically result in an improvement in THE JOURNAL. He said "Better papers, more condensation and a larger wastebasket would naturally follow an extended membership." Mr. Hart was convinced that the American Medical Association should have the strongest association and the best journal.

Within a few months THE JOURNAL began to make improvements, adopting some black letter side headings which gave it a much more lively appearance. An interesting essay is contributed by Dr. James B. Herrick, published July 22, 1893, with his observations on an experience with nearly 1,000 cases of typhoid. These were all seen in the Chicago area. In 1945 there were only 13 cases of typhoid in the entire area (now with a population of 3,500,000) and there were only two deaths.

In 1893 Grover Cleveland became ill. He was attended by Dr. Joseph P. Bryant, who refused to give a detailed statement of the President's illness to the reporters. At once the press set up a terrific howl against the Principles of Ethics, which, incidentally, had nothing whatever to do with the case. The editor of THE JOURNAL felt that the responsibility was not at all that of Dr. Bryant but of the family to give to the press such information as it cared to give.

About this time THE JOURNAL apologized to Dr. R. Harvey Reed of Mansfield, Ohio, for the editorial that had been published by Culbertson. It turned out that Dr. Reed had limited the circularization of his letter and had sent it only to the business committee.

Interesting in this period was the announcement by Dr. John B. Murphy of his button for anastomosing the intestine. The button was at that time a medical sensation.

In New York there was a physician named Robert Lincoln Watkins who was convinced that the germ of tuberculosis was not the cause of the disease. He inoculated himself with a pure culture of the organisms, and THE JOURNAL editorial described him as a "crazy physician."

In the meantime Dr. John C. Culbertson and some of his friends were circulating editorials attacking the American Medical Association, and THE JOURNAL was endeavoring to build up the membership by calling attention to the improved quality of the scientific work and of the publication itself. THE JOURNAL did much to promote the great Pan American Medical Congress that was held in that year in Washington. Incidentally it is amazing that more people did not go because the hotels were charging from $4 to $4.50 a day American plan. The addresses given at the Pan American Medical Congress appeared for the most part in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, and they represented about the best that American medicine could develop. They were of great aid to the quality of THE JOURNAL.

An amusing item describes the excursion train that left Chicago for Washington, which was wrecked near Indianapolis. Dr. G. Frank Lydston devoted several pages to "Muscle Building as Illustrated by the Modern Samson, Sandow" in which he concluded that "Sandow is a wonderful man, but his example is pernicious." Lydston was well in advance of his time in recommending play for exercise rather than muscle culture.

In its coverage of the Pan American Medical Congress, THE JOURNAL printed letters describing the trips and the guests on every one of the special trains that went from Boston, Detroit, Cincinnati and Chicago. The people on the special trains were entertained en route. In Chicago they had a breakfast at the Palmer House which was mixed up with a breakfast at the Auditorium. Dr. Fernando Henrotin welcomed the visitors in French, Dr. E. J. Gardner in Spanish and Dr. John B. Hamilton in English. At 8:30 in the evening they had a party at Kinsley's, where a male quartet sang funny songs and a mandolin orchestra furnished instrumental music. Then they visited the Chicago Medical College and the Cook County Hospital and all of the other medical schools.

In November 1893 the state of New York began to get rid of its coroner system and to follow the examiner system of Massachusetts.

In its last issue for the year, the editor of The Journal has one of the most amusing editorials published in the entire history of the organization. A special correspondent of the *British Medical Journal* had called the attention of that publication to the fact that America lacked independent medical journals controlled by medical men and that it lacked also a national or unitary organization. The *British Medical Journal* therefore addressed a communication to the prominent members of the United States offering them the *British Medical Journal* for $8 a year. This annoyed the editor of The Journal, who replied by pointing out that The Journal of the American Medical Association, while it took legitimate advertisements, kept them in the columns devoted to that purpose and did not supply reading notices as was customary in the British publication.

1894

SAN FRANCISCO

With the beginning of 1894 the editor of The Journal began circulating sample copies to men who were not subscribers with a view to increasing the circulation. In the same issue Dr. N. S. Davis remarked bitterly about the manufacturers of Maltine, who used his picture on a calendar which they circulated to the medical profession. He said "As I have never prescribed an ounce of Maltine nor written a line concerning it in my life, I assume the manufacturers have taken this method to inflict punishment. And certainly they could not have devised a more contemptible or meaner method if they had searched the records of meanness for half a century." The old gentleman must certainly have been angry on this occasion.

The editor of the *New York Medical Record* challenged some of the statements that were used by The Journal in giving an impression as to the amount of reading material that it gave to the readers. By actually counting the words on the pages, the editor of The Journal proved that The Journal of the American Medical Association was the largest medical journal in America. He challenged the *Record* by telling it that The Journal had only just started; the editorial ended with the words "Just wait."

In a long letter to The Journal Dr. N. S. Davis supported the changes that were being proposed for the Constitution and By-Laws; he thought that the time had just about come to stop tinkering with the Constitution and By-Laws.

The editor of The Journal was alert to protect the interests of the publication. In a brief note he told the editors of the *Philadelphia Medical News* and the *Pittsburgh Medical Review* to mind their own business because they ran an editorial objecting to publication in The Journal of an article in two parts. Those were the days of competitive journalism in American medicine, and the battle raged continuously. A week later the editor told the editor of the *Pittsburgh Medical Review* that his ill natured commentary on a note published in The Journal was unwarranted.

A notable feature of The Journal of the American Medical Association for March 24, 1894 was the clinical history of the case of President James A. Garfield by his physician, Dr. Robert Reyburn, who gave a complete description of his case—one of the most important historical documents in its field and yet one hardly mentioned in historical or biographic writings in this country.

In The Journal for March 31, 1894 an article on the psychophysical relations of man considered from the standpoint of a professor of medicine is just about as modern a review of psychosomatic medicine as can be found in periodicals current in 1947.

FRAUDULENT MEDICAL COLLEGES

On March 31, 1894 the Illinois State Board of Health compiled for The Journal of the American Medical Association a list of fraudulent medical institutions. This was the first of the important articles which were to do more to raise the standard of medical education and eliminate low grade medicine in the United States than any other factor.

PROPRIETARY MEDICINES

The medical profession was beginning to be increasingly aware of its responsibility in the promotion of proprietary medicines. Dr. Solomon Solis-Cohen of Philadelphia initiated this fight and constituted himself the leader of the crusade. He was attacked in a vicious letter published in The Journal of the American Medical Association for March 24, 1894, which indulged in personalities as to his race and religion. The writer, whose communication was anonymous, said that he would just as leave use Listerine and Phenacetin until the Pharmacopeia gave him something to take their place. By March 31 half a dozen writers alined themselves with Dr. Solomon Solis-Cohen in this crusade. The majority of physicians already favored the elimination of "patent" medicines and low grade proprietaries from the advertising columns of The Journal. Apparently, "Medicus," who wrote the anonymous letter, overplayed his hand. Issue after issue of The Journal condemned him for conduct that was unethical in his attack on Dr. Solis-Cohen and for being anything but a gentleman. By the virulence of his attack he rallied to the support of Dr. Solis-Cohen many who might otherwise have paid little attention to the controversy.

PIRATING JOURNAL ARTICLES

The editor of The Journal called the attention of his competitors to the fact that the papers read in the annual session were the property of The Journal. Already competitors were asking authors for their papers, offering to publish their articles, to put them in type and to give them free reprints if they would only pull their articles out of The Journal of the American Medical Association.

Early in May 1894 the Washington correspondent of The Journal telegraphed that "Coxey's army," 437 men and 30 horses, fatigued and improperly and scantily fed, without shelter, was camping in an enclosure of 60,000 square feet, recently drained, containing five decomposing manure dumps and abutting on James Creek. There were foul smelling, open sewers and many filthy gutters; there was no shade, and the temperature was about 90 at 10 p. m. The health of the "army" and city was threatened. The editor of The Journal pointed out that some better place should have been found for General Coxey's army and that the animals at Rock Creek Zoo were better cared for.

ATTACKS ON THE PRINCIPLES OF ETHICS

The discussions on the revision of the Principles of Ethics were growing sharp; many of the older leaders of the American Medical Association began to express themselves with such pseudonyms as "Conservative Member" and "Harmony," while Dr. N. S. Davis kept pointing out that the Principles of Ethics were a part of the fundamental law of the Association and that they could be amended only with the same seriousness as the Constitution and By-Laws.

The address of the President, Dr. James F. Hibberd of Richmond, Ind., was concerned wholly with associational affairs and particularly with the desirability of membership in county and state societies as the basis for representation in the American Medical Association. He was glad to report that the Congress had been made to see the importance of the *Index Catalogue* and to continue the appropriation for its publication. Again he urged the establishment of a department of health in the cabinet. It seemed to him that the future of medicine would be along biologic lines and that biology must be more and more the basis for training in medicine.

The San Francisco session had taken many significant actions. The business of the Association had increased to include a budget of more than $35,000, a figure which was to grow with the years, so that the next fifty years saw this $35,000 grow into millions.

The state medical societies had been asked to consider the Principles of Ethics. Twenty-one had reported opposition to any change; two reported in favor of a change, and two recommended that the subject be laid on the table.

THE TREASURER

Dr. R. J. Dunglison had been for seventeen years the faithful and energetic treasurer of the Association without compensation. A resolution was offered by E. E. Montgomery of Philadelphia that he be given an honorarium of $300 and this was referred to the Board of Trustees.

THE LIBRARY

At this meeting the librarian suggested that the library of the American Medical Association be turned over to the Newberry Library in Chicago, to which Nicholas Senn had previously given his complete library.

ADVERTISING IN THE JOURNAL

The Board of Trustees reported that they were receiving cancellations of five subscriptions daily at the time when Dr. John B. Hamilton became editor but that following his assumption of the editorship The Journal began to increase in size and was thereafter more successful as an advertising medium. The Board of Trustees felt that it was necessary for them to take some action on the quality of advertisements. The Board found itself in a difficult position. It needed the advertising to pay for The Journal but it had a resolution from the membership that advertisements should not be accepted for any secret proprietary remedies. They therefore took as their standard what other journals were doing.

The new Constitution and By-Laws came up for consideration. Again Dr. H. D. Didama presented a minority report and his minority report, by vote, became the report of the committee. This threw the entire organization into an uproar. Speeches were made by many of the leaders. Apparently no one was quite certain as to just what had happened, because it ended with the By-Laws being allowed to remain over until the following year. When the consideration of the Principles of Ethics was called up, Dr. Didama again presented a minority report and his minority report was adopted. A motion was then made to lay the whole question on the table, and this motion passed.

The committee that was trying to get a secretary of health for the cabinet was given $400 to go down to Washington and urge its cause.

Then came a battle resulting from a resolution introduced by Edward Jackson of Pennsylvania over the admission of advertisements of proprietary remedies to The Journal.

In the same issue as appear the minutes of the San Francisco session of 1894 is a report on the question of advertising. This report points out that most of the criticism had come from the *Medical News* of Philadelphia, which was printed by a Philadelphia publisher. This Philadelphia publisher had wanted to get The Journal under his control. The *American Lancet* defended the Trustees in their policy to keep on publishing somewhat doubtful advertisements, but it felt that this would cost The Journal $8,000 a year and that the sacrifice was hardly warranted.

The Medical College Association at this time expelled two of its constituent colleges for failing to comply with rules governing the graduation of medical students.

SIGNED REVIEWS AND EDITORIALS

Among the editorial contributors added to the staff in 1894 one finds the significant names of W. A. Pusey and John A. Wyeth. At no time in its history has The Journal published signed editorials or book reviews. The question has been repeatedly agitated in the columns of The Journal and before meetings of the Board of Trustees. Without doubt the adoption of this policy has resulted in a freedom of expression in editorials and book reviews which has been for the advantage of American medicine.

RAILROAD TROUBLES

The record of the return home of former President Hibbert from San Francisco to Indiana indicates that travel in that day of the great railroad strike partook of the hazards of pioneer overland trails. The trains and their arrivals and departures resembled a great deal the kind of delays that accompany long airplane trips in these times. Dr. Hibberd's travel was complicated; the train moved along in jumps of 25 to 50 miles. Chicago was cut off entirely from railroad travel. Stages carried the party over the crest of the Rockies; it took from five to seven days to go from Helena, Mont., to St. Paul. One hundred and seventy physicians found themselves unable to leave Yellowstone National Park and failed to receive any mail for ten to fifteen days.

Now began an agitation which was to make obstetrics and gynecology specialties in medicine. The general surgeons revolted and argued that a woman's liver and intestines and stomach were just the same as those of a man and that the general surgeon could do everything necessary surgically in the abdomen, male or female.

Dr. Hamilton devoted himself strongly during the latter half of 1894 to building subscriptions to The Journal. Every issue urged doctors to subscribe. Premiums were offered to medical students who could secure subscriptions.

THE JOURNAL FINDS A NEW PLANT

In September 1894 The Journal moved from its quarters on Wabash Avenue in Chicago because the new library building cut off the light and air, making it necessary to burn the gas continuously for the last six months. Because of the cramped quarters it had been necessary to have the editorial work done elsewhere. The editor had been authorized by the trustees to secure better accommodations; the new offices were in the *Times* Building at 84-86 Fifth Avenue (now known as Wells Street). The Journal purchased its own presses (the best and fastest that could be purchased at the time) and the remainder of the machinery was of the latest and best pattern.

Dr. Hamilton was still combative; he ended his editorial with the statement:

> Carping critics have not infrequently amused themselves by predicting the downfall of The Journal, but, supported by the Association, it has continued to prosper beyond the most sanguine hopes of its best friends.

In another editorial Dr. Hamilton wrote:

> A medical gentleman on whom a Journal representative called said that he did not care to belong to the Association "because," said he, "the organization is simply a mutual admiration society." Exactly so, and if our fugacious friend wishes to be thoroughly admired, he too should join the Association and assist in the noble work of making it the greatest medical organization the world has yet known.

The editor pointed out that the new press would print 2,300 impressions an hour and that another press would print 2,000 an hour. The Board of Trustees of the Association has more recently authorized the expenditure of some $250,000 to purchase one new rotary press capable of printing ninety-six pages at one time and of turning out 6,000 two-color impressions an hour.

On October 7, 1894 Dr. Oliver Wendell Holmes, the genial autocrat of the breakfast table, died at the age of 85. His passing received editorial comment in every medical journal of the nation. The editor of The Journal called attention to his "famous report of the committee on medical literature." He had participated in the work of the founding and development of the American Medical Association, and his contributions to medical advancement insured him a prominent place in medicine's hall of fame.

In his message to the Congress in December 1894 President Grover Cleveland recommended the establishment of a national board of health and a national health officer. Alas, the years have passed and this vain hope is not yet realized. It continues to be one of the leading planks in the platform of the American Medical Association.

(To be continued)

Clinical Notes, Suggestions and New Instruments

UNUSUAL REACTION FOLLOWING BENADRYL ADMINISTRATION

JACOB GEIGER, M.D.
S. ZELMAN ROSENFIELD, M.D.
and
DANIEL L. HARTMAN, M.D.
New York

Numerous toxic reactions, of a relatively mild nature, have been reported following the administration of Benadryl.[1]

Drowsiness, dizziness, weakness and nausea are those most frequently encountered. Sixty-three per cent of the patients in one series[2] experienced side reactions, the chief one being drowsiness of varying degree up to narcolepsy. In view of the extensive and almost indiscriminate use of Benadryl at the present time, the following case history should be of general interest.

REPORT OF CASE

R. S., a white woman aged 26, was admitted to the First Medical Service because of a generalized seborrheic dermatitis of unknown origin. The lesions involved almost the entire body, including the face. On admission the temperature was 103.2 F. (rectal), the blood pressure was 90 systolic and 60 diastolic, and the pulse rate was 90. The blood count was normal. The lesions of both feet and both legs were secondarily infected. The patient was given penicillin intramuscularly (25,000 units every three hours), ephedrine orally ⅜ grain (0.243 Gm.), three times a day, and supportive vitamins orally; both legs were elevated and warm magnesium soaks were used. The temperature fell to normal levels on the third hospital day, and the administration of penicillin was discontinued on the fifth hospital day. On the fourth hospital day, the administration of Benadryl (50 mg. three times a day) was begun to combat the decided pruritus. After receiving a total of 300 mg. of the drug over the course of three days, the patient complained of palpitation, dimmed vision, malaise without drowsiness and heartburn with nausea. Following the next regularly scheduled dose of Benadryl (making a total of 350 mg.), the patient was found unconscious in bed, cold, pale and pulseless. The blood pressure could not be obtained. The eyes were staring, but the pupils were equal and reacted to light. A solution of epinephrine (7½ minims [0.46 cc.] in a 1 : 1,000 dilution) was given subcutaneously, and all medicaments were stopped. Within thirty minutes the pulse was palpable, though weak, and the patient responded to painful stimuli. In three hours the patient was completely normal, with no recollection of what had happened. The following day the magnesium soaks, the supportive vitamins and the oral dosage of ephedrine were reinstituted and the patient continued to improve. On the eleventh hospital day, the administration of Benadryl was again started under careful observation. Again, after 300 mg. of benadryl were taken over a period of three days, the patient began to complain of palpitation, severe malaise, dimmed vision and nausea. On examination she was observed to be somewhat disoriented and excited. The pulse was weak, the skin was pale and the blood pressure was normal. Benadryl was immediately discontinued, and within two hours the patient felt entirely normal. The skin had returned to its normal color, and the pulse was full and regular.

This appears to be a shocklike reaction to Benadryl not previously reported.

1070 Park Avenue, New York 28—114 East Thirty-Seventh Street, New York 16—320 Concord Avenue, New York 54.

From the Medical Service, Lincoln Hospital, Leander H. Shearer, M.D., Director.

[1] B-dimethylaminoethyl Benzhydryl Ether Hydrochloride, Parke, Davis & Co.

[2] Levin, S. J.: B-dimethylaminoethyl Benzhydryl Ether Hydrochloride (Benadryl): Its Use in Allergic Diseases, J. Allergy **17:** 745 (May) 1946.

UNUSUAL SIDE EFFECT FROM BENADRYL

HARRY R. WEIL, M.D.
Milwaukee

There have been various reports of side effects of beta-dimethylaminoethyl benzhydryl ether hydrochloride (Benadryl).[1] These reports describe, among others, symptoms of nervousness and/or of hyperirritability. McElin and Horton[1a] reported several cases of difficulty in coordination; Waldbott,[1b] muscular twitchings, and Levin,[1c] narcolepsy, confusion, jitters and irritability. This is the report of a case in which the symptoms of nervousness, difficulty in coordination and muscular twitchings were present to the extent of epileptiform movements.

REPORT OF A CASE

J. H. W., a white boy aged 3½, weight 33 pounds (15 Kg.), had symptoms of hay fever for the first time in August and September 1945. Scratch tests confirmed sensitivity to ragweed (giant and short varieties) only, and in December 1945 treatment was instituted for hyposensitization. Treatment was given until June 9, 1946, and then the child left town. At that time he was receiving 6,000 pollen units of mixed giant and short ragweed. Aside from hay fever, the history was noncontributory and physical examination was negative. On Aug. 30, 1946, several weeks after the child had returned to town, he began to manifest mild signs of hay fever, with rhinorrhea, conjunctivitis and sneezing. By Sept. 3, 1946 the symptoms were severe enough to warrant the parents in bringing him to my attention. Benadryl, 50 mg. every morning and at bedtime, was prescribed and gave good, though not complete, relief. At 6 p. m. on September 6 the patient was given a 50 mg. capsule of the drug, and shortly thereafter he went to bed and to sleep. His attitude at this time was considered normal by the parents. At midnight the child awakened with a severe sneezing attack. To alleviate this, he was given 2 capsules of Benadryl (100 mg.) and returned to bed. At 12:20 a. m. the child was found sitting up in bed, singing, laughing and starry-eyed. He did not obey requests to lie down and to be quiet but, instead, laughed and "acted as though he were drunk." At this time muscular twitchings of the face and involuntary spastic movements of the extremities were first observed. Shortly thereafter there was urinary incontinence. In about ten minutes (by which time I was in attendance) the involuntary muscular movements of the face and extremities were more pronounced and the child was irrational—not knowing where he was and not recognizing his parents. At this time he "dove" from his bed to the floor. Although he landed on his head, he laughed as he was picked up and put back to bed. Physical examination at this time was negative except for (1) muscular twitchings and purposeless movements of the extremities; (2) hypertonic patellar and triceps reflexes (corneal, cremasteric and abdominal reflexes were considered normal), and (3) irrational speech gradually becoming slurred.

One and one-half grains (0.09 Gm.) seconal was administered by mouth, and within fifteen minutes the child was sleeping fitfully. Muscular twitchings and athetoid movements continued, and on moments of awakening the speech was slurred past the point of understandability. On several occasions in the next three hours the child attempted to "dive" out of bed and was restrained. About 4 a. m. the child sat up and spoke clearly but still showed evidence of muscular spasm and hypertonic reflexes. In about fifteen minutes he fell asleep and slept fitfully until 9 a. m. The effects of seconal (?) (sleepiness, unsteadiness and anorexia) were evident until after the 2 to 4 p. m. nap. At this time (4 p. m.) the child was further examined and considered normal. The reflexes were normal, the gait was normal and conversation was rational. There was no memory of the activity of the evening and early morning.

COMMENT

Some of the activity which came on after the administration of seconal may be attributed to that drug. There was no history of any equivalent episode prior to the administration of 100 mg. of Benadryl; and since then, as before, the child has taken 50 mg. of Benadryl up to four doses a day without any side effects. There has not been any effort to date to repeat the 100 mg. dose of the drug. The practitioner should adhere to the accepted dose of Benadryl for children, i. e., 2 mg. per pound of body weight.

---

[1] (a) McElin, T. W., and Horton, B. T.: Clinical Observations on the Use of Benadryl: A New Anti-Histamine Substance, Proc. Staff Meet., Mayo Clin. **20**: 417 (Nov. 14) 1945. (b) Waldbott, G. L.: Clinical Results with Benadryl, J. Allergy **17**: 142 (May) 1946. (c) Levin, S. J.: B-Dimethylaminoethyl Benzhydryl Ether Hydrochloride (Benadryl): Its Use in Allergic Diseases, ibid. **17**: 145 (May) 1946. (d) Koelsche, G. A.; Prickman, L. E., and Carryer, H. M.: The Symptomatic Treatment of Bronchial Asthma and Hay Fever with B-Dimethylaminoethyl Benzhydryl Ether Hydrochloride, ibid. **17**: 151 (May) 1946. Eyermann, C. H.: Clinical Experiences with a New Antihistamine Drug, ibid **17**: 210 (July) 1946. Feinberg, S. M.: Histamine Antagonists, ibid. **17**: 217 (July) 1946. Todd, L. C.: Some Clinical Observations of the Use of Benadryl for the Symptomatic Relief of Allergic Conditions, Ann. Allergy 4: 282 (July-Aug.) 1946.

PROLONGED REACTION TO BENADRYL

SAMUEL SCHWARTZBERG, M.D.
and
DARRELL WILLERSON, M.D.
San Antonio, Texas

Benadryl, beta-dimethylaminoethyl benzhydryl ether hydrochloride, became available to the public in March 1946. Since that time it has become widely used for various types of allergy, the demand not infrequently exceeding the supply. While side reactions to the drug are common, definite toxic or allergic reaction has not previously been reported, although 3 possible cases of spontaneous asthma resulting from its use were reported by Waldbott,[1] and a vasospastic condition involving the fingers of one hand was reported by Friedlander and Feinberg,[2] but the condition was thought to be coincidental. Side reactions are normally expected, despite the fact that they are sometimes severe enough to necessitate discontinuance of further treatment. Side reactions previously reported are: drowsiness, sleepiness, nervousness, dryness of the upper respiratory passages, weakness, fatigue, ataxia, facial edema, urinary frequency, nausea, epigastric distress, bad taste, a tendency to bleed, a sense of relaxation, tingling of the extremities or body, tinnitus, chilliness, pruritus, a taste like chloroform, faintness, acute hysterical reaction, dilated pupil,[3] stupor, narcolepsy, confusion, blurred vision, sore tongue, pallor, hot flushes, aggravation of allergic state, irritability, palpitation, exhaustion, collapse, somnambulism, dizziness, numbness, cold extremities[4] and muscular aching.[5] To these may be added headache and acute melancholia (2 cases, 1 with uncontrollable crying in the fourth month of pregnancy). Side reactions promptly disappear with discontinuance of the drug.

An unusual and prolonged reaction to Benadryl was encountered April 19, 1946.

REPORT OF CASE

History.—J. E. H., a white man aged 38, had a chief complaint of swelling of the eyelids, lethargy, numbness, tingling and a feeling of swelling in the hands, deep soreness of the center of the forearms and a feeling of swelling and tightness of the upper arms. On March 23, 1946 he procured one hundred 50 mg. capsules of Benadryl on the advice of a physician friend for the relief of hayfever. He was told by a drug salesman that he could take one whenever the effect of the previous capsule had worn off. The first capsule was taken March 24, while he was traveling. Moderate drowsiness ensued while he was driving, and he did not take any more that day. During the next three weeks he sometimes took from one to three capsules a day; some days he did not take any, but he usually took one or two, and never more than three. The last capsule was taken April 13, which made a total of twenty-three capsules in twenty days. About one week after starting the Benadryl, the patient noticed puffiness of the eyes, and the occurrence of three stools a day, together with considerable amounts of flatus. He had previously been mildly constipated. The stools were lighter in color than normal but well formed. Toward the end of the second week a feeling of tightness was noticed in the arms from the shoulders downward, hands and, to a slight extent, behind the knees. On gripping the fist or shaking hands, discomfort was noticed along the center of the forearm to the elbow and was most pronounced at the center of the flexor surface of the wrist and just beneath the antecubital fossa. The hands felt numb, with prickly sensations present, and the patient had difficulty in working with small tools because he dropped them so frequently. Thought processes had slowed considerably: The patient didn't feel alert and didn't like to talk to people because of difficulty in coordinating thoughts and speech. He told his customers that he was not well and to disregard anything silly that he might say. He felt weak, groggy and sick.

---

[1] Waldbott, G. L.: Clinical Results with Benadryl, J. Allergy **17**: 142, 1946.

[2] Friedlander, S., and Feinberg, S. M.: The Effect of Oral and Local Use of B-Dimethylaminoethyl Benzhydryl Hydrochloride on the Whealing Due to Histamine, Antigen—Antibody Reactions, and Other Whealing Mechanisms, Therapeutic Results in Allergic Manifestations, J. Allergy **17**: 129, 1946.

[3] (a) McElin, T. W., and Horton, B. T.: Clinical Observations on the Use of Benadryl: A New Antihistamine Substance, Proc. Staff Meet., Mayo Clin. **20**: 418, 1946. (b) O'Leary, P. A., and Farber, E. M.: Benadryl in the Treatment of Urticaria, ibid. **20**: 429, 1946. (c) Koelsche, G. A.; Prickman, G. E., and Carryer, H. M.: The Symptomatic Treatment of Bronchial Asthma and Hayfever with Benadryl, ibid. **20**: 432, 1946.

[4] Levin, S. J.: B-Dimethylaminoethyl Benzhydryl Ether Hydrochloride (Benadryl): Its Use in Allergic Diseases, J. Allergy **17**: 145, 1946.

[5] Curtis, A. C., and Owens, B. B.: Beta-Dimethylaminoethyl Benzhydryl Ether Hydrochloride (Benadryl) in Treatment of Acute and Chronic Urticaria, Univ. Hosp. Bull., Ann Arbor **11**: 25, 1945.

The patient continued at his work of installation of x-ray machines, except for two or three days when he felt utterly incapable of working, because these machines were urgently needed at the military hospitals and there was no one to help or replace him. He finally came to the conclusion that the Benadryl might be causing his trouble, and it was discontinued. He consulted his physician on April 19, six days after the last capsule was taken. The only other drug used during this period was privine hydrochloride nose drops. These were discontinued by the physician, but were prescribed at a later period without ill effects.

Physical Examination.—The sallow pallid skin, the puffy eyes and the sick look of the patient were striking. The first thought of the physician was of nephritis. The patient was above the average in intelligence and gave an unusually good history, although speech was slow and slightly slurred. The only objective observations were a blood pressure of 100 systolic and 64 diastolic, edema of the eyelids, tenderness over the median nerve in both forearms and questionable edema of the forearms and hands. Examination of the fundus of the eye by an ophthalmologist [6] was negative. Evidence of papilledema or increased intracranial pressure was absent. Tests of epicritic sensation, pain on heat and cold, muscle tendon and joint sense, light touch and astereognosis revealed normal responses. Gait and reflexes were normal. Muscular wasting was not observed, but some muscular weakness of the forearms and hands was evident. Urinalysis and a blood count were within normal limits. No eosinophils were present. A scratch test with Benadryl powder gave a weak positive reaction, as did an intradermal test with a 1:100 solution of the drug. The same reactions were obtained on a normal control who had never taken Benadryl and are without significance. Treatment was not given, but intravenous histamine was elected as the treatment of choice if the condition failed to improve.

Progress Notes.—The patient began to notice slight improvement on April 21. The tendency to constipation had returned. He did not feel quite as groggy. On April 29 he felt much better and stayed up until 11 o'clock at night, instead of going to bed at 8 o'clock, as he had been doing since the onset of his illness. Mentally he was more alert. The tightness seemed to be localized about the junction of the middle and upper third of his arm. Puffiness of the eyes was less pronounced and the color of the skin was closer to normal. The hands still felt somewhat numb and he could not grip things well. The blood pressure was 124 systolic and 90 diastolic. By May 31 the condition had greatly improved. Weakness and discomfort of the wrists and elbows when carrying objects were present, but the prickling sensations in the hands were present only occasionally. His mental alertness was nearly normal. On July 15, the patient stated that within the preceding one or two weeks he had felt absolutely normal from a standpoint of mental alertness. There is still slight discomfort beneath the right antecubital fossa on carrying heavy objects or on great pronation of the forearm.

COMMENT

It may be noted that most of the symptoms appear to be an intensification of the normally expected action or side reaction of Benadryl. The lowered blood pressure is a normal action of this drug.[2] The gastrointestinal symptoms may be readily explained on the basis of decreased histamine and decreased secretion of the stomach as a result of Benadryl.[3a] Edema has been observed among the side reactions [3c] of the drug. The mental lethargy, drowsiness and weakness appear to be intensifications of side reactions. Numbness and tingling of the extremities are normal side reactions. Pallor has been observed among the side reactions.[4] The neuritic symptoms alone have not been previously reported in human beings. However, Parke Davis and Company [7] has reported polyneuritis in dogs following 5 mg. of the drug per kilogram of body weight given intravenously, when the dose is repeated daily. Neuritic symptoms and signs subsequent to the use of drugs are not unusual. Over 100 cases of various types of neuritis have been reported following the use of the sulfonamides.[8] Other cases of neuritis have been reported following the use of Hapamine [9] (a chemical combination of histamine and depreciated horse serum globulin) and various serums and extracts, especially tetanus antitoxin.[10] Opinion is divided as to whether the neuritic symptoms are on the basis of toxic effect or allergic edema. Whatever the mechanisms in this case, the manifestations are toxic and appear to be closely linked to the normal cellular action of the drug. The present trend is to view the action of Benadryl as displacing histamine in the tissues.[11] Pyribenzamine (N'pyridil-N'benzyl-N-dimethylethylenediamine), the sulfonamides and histamine derivatives are now thought to act similarly by displacement.[12] Whether a cumulative effect of the drug was present is unknown. It would seem likely.

1201 South Texas Building—Nix Professional Building.

DANGER WITH BENADRYL OF SELF MEDICATION AND LARGE DOSAGE

MILTON C. BORMAN, M.D.
Milwaukee

Slater and Francis recently reported the use of Benadryl (beta-dimethylaminoethyl benzohydryl ether hydrochloride) as a contributing cause of an accident.[1] They called attention to the frequency of drowsiness as a side action of the drug. The following report of a case illustrates the danger of self medication and large dosage.

REPORT OF CASE

A convent nun, aged 18, had been under my care for a year because of obesity and menstrual difficulties. She had had attacks of asthma since childhood, which were worse in ragweed season and early winter than during the rest of the year. She was given a prescription for forty-eight 50 mg. capsules of Benadryl. At the convent she was allowed to keep the medicament in her own room. She took two of the capsules, as prescribed, the first day, with decided relief. She felt so much improved that the next day she decided to take the capsules oftener. During the following three days a total of forty capsules disappeared. She stated later that she had taken all of them. None were recovered in her room or in other parts of the convent where she had been. She became drowsy and began to act queerly. She dropped clean clothes in the laundry, left her tasks partially completed, wandered off into other parts of the convent and did not remain in her bed at night. During "instruction period" she asked another Sister to pass the salt. Her temperature, pulse and respiratory rate were normal. She was lethargic, confused and disoriented. The heart sounds were normal. The blood pressure was 120 systolic and 80 diastolic. Fluids were given freely, including several cups of strong coffee during the day. For two nights she had "suffocating spells" but had no other complaints. Within forty-eight hours she had made an apparently complete recovery.

---

[6] The examination of the eyes was made by Dr. John L. Matthews.

[7] Benadryl: An Antiallergic and Antispasmodic Agent, Parke Davis and Company, July 1946.

[8] Bruun, E., and Hermann, K.: Polyneuritis After Treatment with Sulfonamide Preparations, Acta med. Scandinav. **111**: 261, 1942. Mueller, R.: Polyneuritis Following Sulfanilamide Therapy, Acta med. Scandinav. **121**: 95, 1945.

[9] Epstein, S.: Sensitivity to Hapamine: Neuritis Occurring During Treatment with Hapamine, Internat. Corresp. Club of Allergy **8**: 56, 1945.

[10] Hughes, R. R.: Neurological Complications of Serum and Vaccine Therapy, Lancet **2**: 464, 1944.

[11] Wells, J. A., and Morris, A. C.: Observations on the Antagonism of Histamine by B-Dimethyl Aminoethyl Benzhydryl Ether (Benadryl), Federation Proc. **4**: 140, 1945.

[12] Mayer, R. L.: Antihistaminic Substances with Special Reference to Pyribenzamine, J. Allergy **17**: 153, 1946.

[1] Slater, B. J., and Francis, N.: Benadryl: A Contributing Cause of an Accident, J. A. M. A. **132**: 212 (Sept. 28) 1946.

SUMMARY

Although there is no absolute evidence that the patient whose case is herein reported took 2,000 mg. of Benadryl in forty-eight hours, her general condition indicated overdosage and illustrates the danger of self medication with this drug. It is of further interest that two 50 mg. tablets taken in twelve hours by this patient produced such relief and such feeling of well-being that she increased the dosage without obtaining further advice. It is possible that the medicament may have affected her judgment. Attention should also be called to the likelihood that some patients are more prone than others to the side effects of this drug; when it is prescribed smaller doses than those usually recommended should be used.

MULTIPLE PYOGENIC ABSCESSES OF THE LIVER

Cure by Penicillin in Case Due to Anaerobic Streptococci

MARSHALL L. MICHEL Jr., M.D.
and
WILLARD R. WIRTH, M.D.
New Orleans

Abscesses of the liver may be classified in two main groups, (1) amebic (tropical) and (2) pyogenic. Amebic hepatitis is the result of invasion of the biliary radicles by Endameba histolytica. The amebas are usually present in the large bowel and are carried through the portal veins to the liver, where a specific hepatitis occurs. Further discussion of this type of hepatic abscess is not in the scope of this paper.

Hepatitis or hepatic abscesses due to pyogenic microorganisms present a more complex clinical picture. Invasion of the liver may occur by any of four routes:[1] (1) infection from areas drained by the portal system; (2) direct spread from contiguous structures; (3) penetrating trauma, and (4) bloodborne infection. In many instances no antecedent focus of infection can be demonstrated.

A great deal has been written on pyogenic hepatic abscesses, but detailed bacteriologic studies have been neglected. In an extensive review of the literature by Ochsner[1] there were only 184 cases in which bacteriologic studies had been made. The bacteria most commonly found in pyogenic abscesses of the liver are Escherichia coli, hemolytic and nonhemolytic streptococci and staphylococci.

Many other types of pyogenic bacteria have been cultured from hepatic abscesses. Among these are Klebsiella pneumoniae, Clostridium welchi, streptococci of the viridans group, pneumococci, Alcaligenes fecalis, Bacillus subtilis, diphtheroids, Proteus vulgaris, spirochetes, Bacillus pyocyaneus, Eberthella typhosa, Bacteroides funduliformis and Bacterium dysenteriae.

Anaerobic bacteria have been infrequently reported in pyogenic abscesses of the liver, undoubtedly because of failure to obtain anaerobic cultures in a large percentage of cases. Anaerobic bacteria of various types are common inhabitants of the gastrointestinal tract. They play an important part in the etiology of numerous cases of pyogenic hepatitis.

Emphasis has been placed on the anaerobic streptococcus as a pathogenic bacteria by Meleney[2] and others. It is thought to be one of the organisms which contributes to the characteristic fecal odor of the contents of the lower portion of the small intestine and the colon. Pure cultures have been infrequently isolated from pyogenic abscesses of the liver.

In 1937 McDonald, Henthorne and Thompson[3] reported a case of perforated duodenal ulcer which was repaired surgically. Two and one half months later at necropsy multiple hepatic abscesses and a subphrenic abscess were found, from which a pure culture of anaerobic streptococci was obtained.

In 1942 St. John, Pulaski and Ferrer[4] reported an isolated abscess of the right lobe of the liver which was cured by two stage transperitoneal surgical drainage. They obtained a pure culture of anaerobic streptococci the portal of entry of which could not be definitely determined.

To our knowledge these are the only previously reported cases of pyogenic abscesses of the liver due to anaerobic streptococci.

A case is herein reported of multiple abscesses of the right lobe of the liver from which pure cultures of anaerobic streptococci were obtained at operation. The portal of entry could not be determined but the gross appearance of the liver suggested a hematogenous origin. Subsequent treatment with penicillin produced a cure. Therefore, this is the first recorded case of multiple hepatic abscesses due to anaerobic streptococci in which the patient has survived.

REPORT OF CASE

History.—B. H., a white woman aged 22, was admitted to Touro Infirmary on Oct. 19, 1943. For five weeks she had had a high fever and chills. At the onset of her illness, the patient stated she had slight abdominal pain in the region of the umbilicus, nausea and anorexia. Several days later she began to have slight pains in the right upper quadrant and epigastric region of the abdomen. This continued and the chills and fever persisted. The family history was noncontributory.

Past Medical History.—The patient stated that she had had a gynecologic disturbance several weeks prior to the onset of her present illness but refused to give any of the details. There was some question whether she might have had a miscarriage in the past several months. Otherwise, the past medical history was noncontributory.

Physical Examination.—The blood pressure was 124 systolic and 88 diastolic. The pulse rate was 130, the temperature 101 F., the respiratory rate 16. The patient was a fairly well developed, poorly nourished white woman who was acutely ill. The heart and lungs were essentially normal. In the abdomen there was decided tenderness and rigidity in the epigastrium and upper right quadrant. The spleen could be palpated approximately one fingerbreadth below the costal margin. Distention or loss of symmetry was not present. Tumor masses could not be palpated. The pelvic examination revealed normal conditions.

Laboratory Data.—There were 10,160 white blood cells and 2,760,000 red blood cells with 54 per cent hemoglobin. The differential count showed 76 per cent neutrophils, 16 per cent lymphocytes and 8 per cent monocytes. Malarial parasites were not seen in the blood. The nonprotein nitrogen level was 23 mg., the blood dextrose 97.5 mg. per hundred cubic centimeters. Urinalysis of a catheterized specimen was negative. The Wassermann test was negative, as were agglutination tests for febrile diseases, blood culture and stool examination. The serum proteins were 5.81, 7.14 and 7.07 Gm. per hundred cubic centimeters on November 15, 19 and 22, respectively.

From the Surgical and Medical Services of Touro Infirmary.

[1] Ochsner, A.; DeBakey, M., and Murray, S.: Pyogenic Abscess of the Liver: Analysis of Forty-Seven Cases with Review of Literature, Am. J. Surg. **40:** 292-319 (April) 1938; correction, ibid. **40:** 504 (June) 1938.

[2] Sandusky, W. R.; Pulaski, E. J.; Johnson, B. A., and Meleney, F. L.: The Anaerobic Nonhemolytic Streptococci in Surgical Infections on a General Surgical Service, Surg., Gynec. & Obst. **75:** 145-156 (Aug.) 1942.

[3] McDonald, J. R.; Henthorne, J. C., and Thompson, L.: Role of Anaerobic Streptococci in Human Infections, Arch. Path. **23:** 230-249 (June) 1937.

[4] St. John, F. B.; Pulaski, E., and Ferrer, J. M.: Primary Abscess of Liver Due to Anaerobic Non-Hemolytic Streptococcus, Ann. Surg. **116:** 217-222 (Aug.) 1942.

previous capsule had worn off. The first capsule was taken March 24, while he was traveling. Moderate drowsiness ensued while he was driving, and he did not take any more that day. During the next three weeks he sometimes took from one to three capsules a day; some days he did not take any, but he usually took one or two, and never more than three. The last capsule was taken April 13, which made a total of twenty-three capsules in twenty days. About one week after starting the Benadryl, the patient noticed puffiness of the eyes, and the occurrence of three stools a day, together with considerable amounts of flatus. He had previously been mildly constipated. The stools were lighter in color than normal but well formed. Toward the end of the second week a feeling of tightness was noticed in the arms from the shoulders downward, hands and, to a slight extent, behind the knees. On gripping the fist or shaking hands, discomfort was noticed along the center of the forearm, to the elbow and was most pronounced at the center of the flexor surface of the wrist and just beneath the antecubital fossa. The hands felt numb, with prickly sensations present, and the patient had difficulty in working with small tools because he dropped them so frequently. Thought processes had slowed considerably: The patient didn't feel alert and didn't like to talk to people because of difficulty in coordinating thoughts and speech. He told his customers that he was not well and to disregard anything silly that he might say. He felt weak, groggy and sick.

The patient continued at his work of installation of x-ray machines, except for two or three days when he felt utterly incapable of working, because these machines were urgently needed at the military hospitals and there was no one to help or replace him. He finally came to the conclusion that the Benadryl might be causing his trouble, and it was discontinued. He consulted his physician on April 19, six days after the last capsule was taken. The only other drug used during this period was privine hydrochloride nose drops. These were discontinued by the physician, but were prescribed at a later period without ill effects.

Physical Examination.—The sallow pallid skin, the puffy eyes and the sick look of the patient were striking. The first thought of the physician was of nephritis. The patient was above the average in intelligence and gave an unusually good history, although speech was slow and slightly slurred. The only objective observations were a blood pressure of 100 systolic and 64 diastolic, edema of the eyelids, tenderness over the median nerve in both forearms and questionable edema of the forearms and hands. Examination of the fundus of the eye by an ophthalmologist[6] was negative. Evidence of papilledema or increased intracranial pressure was absent. Tests of epicritic sensation, pain on heat and cold, muscle tendon and joint sense, light touch and astereognosis revealed normal responses. Gait and reflexes were normal. Muscular wasting was not observed, but some muscular weakness of the forearms and hands was evident. Urinalysis and a blood count were within normal limits. No eosinophils were present. A scratch test with Benadryl powder gave a weak positive reaction, as did an intradermal test with a 1:100 solution of the drug. The same reactions were obtained on a normal control who had never taken Benadryl and are without significance. Treatment was not given, but intravenous histamine was elected as the treatment of choice if the condition failed to improve.

Progress Notes.—The patient began to notice slight improvement on April 21. The tendency to constipation had returned. He did not feel quite as groggy. On April 29 he felt much better and stayed up until 11 o'clock at night, instead of going to bed at 8 o'clock, as he had been doing since the onset of his illness. Mentally he was more alert. The tightness seemed to be localized about the junction of the middle and upper third of his arm. Puffiness of the eyes was less pronounced and the color of the skin was closer to normal. The hands still felt somewhat numb and he could not grip things well. The blood pressure was 124 systolic and 90 diastolic. By May 31 the condition had greatly improved. Weakness and discomfort of the wrists and elbows when carrying objects were present, but the prickling sensations in the hands were present only occasionally. His mental alertness was nearly normal. On July 15, the patient stated that within the preceding one or two weeks he had felt absolutely normal from a standpoint of mental alertness. There is still slight discomfort beneath the right antecubital fossa on carrying heavy objects or on great pronation of the forearm.

COMMENT

It may be noted that most of the symptoms appear to be an intensification of the normally expected action or side reaction of Benadryl. The lowered blood pressure is a normal action of this drug.[2] The gastrointestinal symptoms may be readily explained on the basis of decreased histamine and decreased secretion of the stomach as a result of Benadryl.[3] Edema has been observed among the side reactions[3c] of the drug. The mental lethargy, drowsiness and weakness appear to be intensifications of side reactions. Numbness and tingling of the extremities are normal side reactions. Pallor has been observed among the side reactions.[1] The neuritic symptoms alone have not been previously reported in human beings. However, Parke Davis and Company[7] has reported polyneuritis in dogs following 5 mg. of the drug per kilogram of body weight given intravenously, when the dose is repeated daily. Neuritic symptoms and signs subsequent to the use of drugs are not unusual. Over 100 cases of various types of neuritis have been reported following the use of the sulfonamides.[8] Other cases of neuritis have been reported following the use of Hapamine[9] (a chemical combination of histamine and depreciated horse serum globulin) and various serums and extracts, especially tetanus antitoxin.[10] Opinion is divided as to whether the neuritic symptoms are on the basis of toxic effect or allergic edema. Whatever the mechanisms in this case, the manifestations are toxic and appear to be closely linked to the normal cellular action of the drug. The present trend is to view the action of Benadryl as displacing histamine in the tissues.[11] Pyribenzamine (N'pyridil-N'benzyl-N-dimethylethylenediamine), the sulfonamides and histamine derivatives are now thought to act similarly by displacement.[12] Whether a cumulative effect of the drug was present is unknown. It would seem likely.

1201 South Texas Building—Nix Professional Building.

DANGER WITH BENADRYL OF SELF MEDICATION AND LARGE DOSAGE

MILTON C. BORMAN, M.D.
Milwaukee

Slater and Francis recently reported the use of Benadryl (beta-dimethylaminoethyl benzohydryl ether hydrochloride) as a contributing cause of an accident.[1] They called attention to the frequency of drowsiness as a side action of the drug. The following report of a case illustrates the danger of self medication and large dosage.

REPORT OF CASE

A convent nun, aged 18, had been under my care for a year because of obesity and menstrual difficulties. She had had attacks of asthma since childhood, which were worse in ragweed season and early winter than during the rest of the year. She was given a prescription for forty-eight 50 mg. capsules of Benadryl. At the convent she was allowed to keep the medicament in her own room She took two of the capsules, as prescribed, the first day, with decided relief She felt so much improved that the next day she decided to take the capsules oftener During the following three days a total of forty capsules disappeared She stated later that she had taken all of them None were recovered in her room or in other parts of the convent where she had been She became drowsy and began to act queerly She dropped clean clothes in the laundry, left her tasks partially completed, wandered off into other parts of the convent and did not remain in her bed at night During 'instruction period' she asked another Sister to pass the salt Her temperature, pulse and respiratory rate were normal She was lethargic, confused and disoriented The heart sounds were normal The blood pressure was 120 systolic and 80 diastolic Fluids were given freely, including several cups of strong coffee during the day For two nights she had 'suffocating spells' but had no other complaints Within forty-eight hours she had made an apparently complete recovery

---

[6] The examination of the eyes was made by Dr. John L. Matthews.

[7] Benadryl: An Antiallergic and Antispasmodic Agent, Parke Davis and Company, July 1946.

[8] Bruun, E., and Hermann, K.: Polyneuritis After Treatment with Sulfonamide Preparations, Acta med. Scandinav. **111**:261, 1942. Mueller, R.: Polyneuritis Following Sulfanilamide Therapy, Acta med Scandinav. **121**:95, 1945.

[9] Epstein, S.: Sensitivity to Hapamine: Neuritis Occurring During Treatment with Hapamine, Internat. Corresp. Club of Allergy **8**:56, 1945.

[10] Hughes, R. R.: Neurological Complications of Serum and Vaccine Therapy, Lancet **2**:464, 1944.

[11] Wells, J. A., and Morris, A. C.: Observations on the Antagonism of Histamine by B-Dimethyl Aminoethyl Benzhydryl Ether (Benadryl), Federation Proc. **4**:140, 1945.

[12] Mayer, R. L.: Antihistaminic Substances with Special Reference to Pyribenzamine, J. Allergy **17**:153, 1946.

[1] Slater, B. J., and Francis, N.: Benadryl: A Contributing Cause of an Accident, J. A. M. A. **132**:212 (Sept. 28) 1946

SUMMARY

Although there is no absolute evidence that the patient whose case is herein reported took 2 000 mg of Benadryl in forty-eight hours, her general condition indicated overdosage and illustrates the danger of self medication with this drug It is of further interest that two 50 mg tablets taken in twelve hours by this patient produced such relief and such feeling of well-being that she increased the dosage without obtaining further advice It is possible that the medicament may have affected her judgment Attention should also be called to the likelihood that some patients are more prone than others to the side effects of this drug, when it is prescribed smaller doses than those usually recommended should be used

---

MULTIPLE PYOGENIC ABSCESSES OF THE LIVER

Cure by Penicillin in Case Due to Anaerobic Streptococci

MARSHALL L MICHEL Jr, M D
and
WILLARD R WIRTH, M D
New Orleans

Abscesses of the liver may be classified in two main groups, (1) amebic (tropical) and (2) pyogenic Amebic hepatitis is the result of invasion of the biliary radicles by Endameba histolytica The amebas are usually present in the large bowel and are carried through the portal veins to the liver, where a specific hepatitis occurs Further discussion of this type of hepatic abscess is not in the scope of this paper

Hepatitis or hepatic abscesses due to pyogenic micro-organisms present a more complex clinical picture Invasion of the liver may occur by any of four routes [1] (1) infection from areas drained by the portal system, (2) direct spread from contiguous structures, (3) penetrating trauma and (4) blood-borne infection In many instances no antecedent focus of infection can be demonstrated

A great deal has been written on pyogenic hepatic abscesses, but detailed bacteriologic studies have been neglected In an extensive review of the literature by Ochsner [1] there were only 184 cases in which bacteriologic studies had been made The bacteria most commonly found in pyogenic abscesses of the liver are Escherichia coli hemolytic and nonhemolytic streptococci and staphylococci

Many other types of pyogenic bacteria have been cultured from hepatic abscesses Among these are Klebsiella pneumoniae, Clostridium welchii, streptococci of the viridans group, pneumococci Alcaligenes fecalis Bacillus subtilis, diphtheroids Proteus vulgaris spirochetes, Bacillus pyocyaneus, Eberthella typhosa, Bacteroides funduliformis and Bacterium dysenteriae

Anaerobic bacteria have been infrequently reported in pyogenic abscesses of the liver, undoubtedly because of failure to obtain anaerobic cultures in a large percentage of cases. Anaerobic bacteria of various types are common inhabitants of the gastrointestinal tract They play an important part in the etiology of numerous cases of pyogenic hepatitis

Emphasis has been placed on the anaerobic streptococcus as a pathogenic bacteria by Meleney [2] and others It is thought to be one of the organisms which contributes to the characteristic fecal odor of the contents of the lower portion of the small intestine and the colon Pure cultures have been infrequently isolated from pyogenic abscesses of the liver

In 1937 McDonald, Henthorne and Thompson [3] reported a case of perforated duodenal ulcer which was repaired surgically Two and one half months later at necropsy multiple hepatic abscesses and a subphrenic abscess were found, from which a pure culture of anaerobic streptococci was obtained

In 1942 St John, Pulaski and Ferrer [4] reported an isolated abscess of the right lobe of the liver which was cured by two stage transperitoneal surgical drainage They obtained a pure culture of anaerobic streptococci the portal of entry of which could not be definitely determined

To our knowledge these are the only previously reported cases of pyogenic abscesses of the liver due to anaerobic streptococci

A case is herein reported of multiple abscesses of the right lobe of the liver from which pure cultures of anaerobic streptococci were obtained at operation The portal of entry could not be determined but the gross appearance of the liver suggested a hematogenous origin Subsequent treatment with penicillin produced a cure Therefore, this is the first recorded case of multiple hepatic abscesses due to anaerobic streptococci in which the patient has survived

REPORT OF CASE

History—B H, a white woman aged 22, was admitted to Touro Infirmary on Oct 19, 1943 For five weeks she had had a high fever and chills At the onset of her illness, the patient stated she had slight abdominal pain in the region of the umbilicus, nausea and anorexia Several days later she began to have slight pains in the right upper quadrant and epigastric region of the abdomen This continued and the chills and fever persisted The family history was noncontributory.

Past Medical History—The patient stated that she had had a gynecologic disturbance several weeks prior to the onset of her present illness but refused to give any of the details There was some question whether she might have had a miscarriage in the past several months Otherwise, the past medical history was noncontributory

Physical Examination—The blood pressure was 124 systolic and 88 diastolic The pulse rate was 130, the temperature 101 F, the respiratory rate 16 The patient was a fairly well developed, poorly nourished white woman who was acutely ill. The heart and lungs were essentially normal In the abdomen there was decided tenderness and rigidity in the epigastrium and upper right quadrant The spleen could be palpated approximately one fingerbreadth below the costal margin Distention or loss of symmetry was not present Tumor masses could not be palpated The pelvic examination revealed normal conditions

Laboratory Data—There were 10,160 white blood cells and 2,760,000 red blood cells with 54 per cent hemoglobin The differential count showed 76 per cent neutrophils, 16 per cent lymphocytes and 8 per cent monocytes Malarial parasites were not seen in the blood The nonprotein nitrogen level was 23 mg, the blood dextrose 97 5 mg per hundred cubic centimeters Urinalysis of a catheterized specimen was negative The Wassermann test was negative, as were agglutination tests for febrile diseases, blood culture and stool examination The serum proteins were 5 81, 7 14 and 7 07 Gm per hundred cubic centimeters on November 15, 19 and 22, respectively.

From the Surgical and Medical Services of Touro Infirmary

[1] Ochsner A DeBakey M and Murray, S Pyogenic Abscess of the Liver Analysis of Forty Seven Cases with Review of Literature Am J Surg **10** 92 19 (April) 19 8 correction ibid **40** 504 (June) 1 8

[2] Sandusky, W R, Pulaski E J, Johnson, B A, and Meleney, F L The Anaerobic Nonhemolytic Streptococci in Surgical Infections on a General Surgical Service, Surg, Gynec & Obst **75**. 145 156 (Aug) 1942

[3] McDonald, J R, Henthorne, J C and Thompson, L Role of Anaerobic Streptococci in Human Infections, Arch Path **23**: 230 240 (June) 1937

[4] St John, F B Pulaski E and Ferrer J M Primary Abscess of Liver Due to Anaerobic Non Hemolytic Streptococcus, Ann Surg **116**: 217 222 (Aug) 1942

Course.—The patient's temperature ran a typical septic curve. It ranged between a maximum of 104 to 105 F. and a minimum of 99 to 100 F. There was a daily elevation and decline to these levels with chills occurring when the peak was reached. This continued for two and a half weeks. The patient received extensive sulfathiazole and sulfadiazine therapy without improvement.

She was seen in consultation by a urologist, who stated that pathologic conditions were not present in the genitourinary tract. She was given frequent transfusions of blood and supportive therapy. Prior to admission she had had an extensive course of quinine and quinacrine hydrochloride without effect.

Roentgenologic Observations.—Examination of the chest revealed entirely normal conditions, and the diaphragms on both sides were smooth and well rounded. The costophrenic and cardiophrenic angles were well defined.

Anteroposterior projections of the abdomen showed the renal shadows partially obscured by intestine. However, the psoas borders were sharp and urinary or biliary calculi were not visible. The spleen was slightly enlarged. Repeated examinations of the chest revealed normal conditions.

The gastrointestinal series, with particular attention to the stomach and duodenum, also failed to reveal abnormality. Repeated examinations of the diaphragm, both by fluoroscopy and film, did not show definite abnormality.

It was concluded that the patient had a pyogenic abscess of the liver and that an exploratory laparotomy was justified.

Surgical Data.—On Nov. 2, 1943 a celiotomy was performed. Under general anesthesia, an upper right paramedian muscle-splitting incision was made. The peritoneal cavity was opened, and the liver was found to be greatly enlarged throughout all portions. There was no gross evidence of any localized abscess. Exploratory aspiration of the right lobe of the liver was performed, and a small amount of pus was obtained from several locations. The left lobe presented a similar external appearance but was not explored.

The appendix was removed because of the possibility that it was an etiologic factor. Exploration of the pelvis was negative. The original abdominal incision was closed.

A small subcostal incision was made directly over the right lobe of the liver, and the wound was packed open with iodoform gauze.

On Nov. 5, 1943, under general anesthesia, the original pack was removed. Again the right lobe of the liver was aspirated and small amounts of pus were obtained from several areas. An incision approximately 3 inches (7.6 cm.) long was made into the right lobe of the liver and was deepened with the electrosurgical unit. Inspection of the liver parenchyma revealed the presence of innumerable small abscess cavities throughout the entire substance of the right lobe. Since it was impossible to drain all these cavities surgically, the original wound in the liver was packed open with iodoform gauze.

The substance removed from the abscess was proved to be pus on microscopic examination, and pure cultures of anaerobic streptococci were obtained.

Postoperative Course.—Extensive intravenous sulfadiazine therapy from Nov. 3 to 15, 1943 was without avail. The patient continued in extremely critical condition, and the temperature was unaltered by the surgical intervention.

On Nov. 15, 1943, through the courtesy of Dr. Chester Keefer of the National Research Council, penicillin was obtained. In twenty-four hours 120,000 units of penicillin were administered intravenously. Subsequently, the dosage was gradually diminished and was administered intramuscularly. Penicillin therapy was continued for thirteen days.

Twenty-four hours after the administration of penicillin the temperature began gradually to decline. Four days after the drug was started, the temperature was down to 99.2 F. and remained between 99 and 100 F. for six days. The patient was discharged from the hospital on Dec. 2, 1943. There was still some drainage from the wound, but she was clinically much improved.

The cephalin flocculation time was 4 plus immediately before and after the operation and was also 4 plus when the patient was discharged from the hospital. The results of this test for liver function remained 4 plus for seven months.

When the patient was seen again some twenty months after the operation the cephalin flocculation time was 2 plus in twenty-four hours. The patient was completely well and did not show residual signs of her previous severe illness. When last seen she was approximately five months pregnant, and her general physical condition was excellent.

COMMENT

In the case herein reported surgical drainage and sulfonamide therapy were of no avail. The patient was completely cured by penicillin therapy. This is the first recorded case of multiple abscesses of the liver due to anaerobic streptococci in which the patient has survived. Surgical exploration was necessary in order to identify the micro-organism infecting the liver. At the time when this patient was being treated penicillin was obtainable only in limited quantities, and it was necessary to know the exact type of pathogenic bacteria involved before the drug could be obtained from the National Research Council.

At the present time and in the future pyogenic hepatitis due to anaerobic streptococci will undoubtedly be cured by the use of penicillin without first determining the exact nature of the hepatic infection by surgical exploration.

SUMMARY

1. Anaerobic bacteria have been reported infrequently as the primary etiologic factor in pyogenic abscesses of the liver.
2. Two previous cases of hepatic abscess due to anaerobic streptococci have been reported. One of these was a single abscess which was cured surgically. The other case showed multiple abscesses and had a fatal termination.
3. Herein is reported the third recorded case of hepatic abscess due to anaerobic streptococci. Multiple abscesses were present, and the patient was cured with penicillin after surgical drainage and sulfonamide therapy had been ineffective.
4. This is the first recorded case of multiple abscesses of the liver due to anaerobic streptococci which has been cured.
5. In the future, cases of pyogenic hepatitis due to anaerobic streptococci will undoubtedly be cured by penicillin without surgical drainage to determine the exact bacteriologic cause of the hepatic infection.
6. Penicillin is an effective agent against anaerobic streptococci.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following article.

The Council wishes to express its appreciation for the valuable cooperation of the Consultants on Audiometers and Hearing Aids in reviewing this article. The consultants are Dr. William E. Grove, chairman, and Drs. Gordon Berry, Hallowell Davis, Edmund P. Fowler, Isaac H. Jones, Dean Lierle, Moses H. Lurie, Douglas Macfarlan, C. Stewart Nash and Paul E. Sabine. Howard A. Carter, *Secretary.*

TENTATIVE STANDARD PROCEDURE FOR EVALUATING THE PERCENTAGE LOSS OF HEARING IN MEDICOLEGAL CASES

1. Since the pure tone audiometer is the best available instrument for determining the acuity of hearing, the procedure recommended herein is based on measurements of hearing loss with an accepted standard audiometer. Since, in the present state of knowledge, it is not possible to arrive at quantitative evaluation of hearing capacity except by audiometric measurements, no consideration is given to other than audiometric data in setting up this basic procedure.

2. The recommended procedure is based only on threshold measurements of acuity of hearing for air-conducted sound.

3. Under each frequency, the weighted percentage losses corresponding to measured decibel losses are shown on the charts before they are filled out. These percentages are based on the existing data bearing on the relative importance of the different portions of the auditory frequency and intensity range in the hearing of speech.

4. To determine the percentage of hearing loss with the charts, proceed as shown in the instructions beneath them.

5. Computation of binaural hearing loss is carried out in four steps indicated under the heading, "Computation of per cent loss of capacity to hear speech." The weighting of percentage losses shown for the two ears represents the composite judgment of the Consultants on Audiometers and Hearing Aids. This judgment is based on both clinical experience and practical considerations. The percentage loss of hearing is the average of the losses for the better ear and for the poorer ear taken separately and weighted in the ratio of 7 to 1.

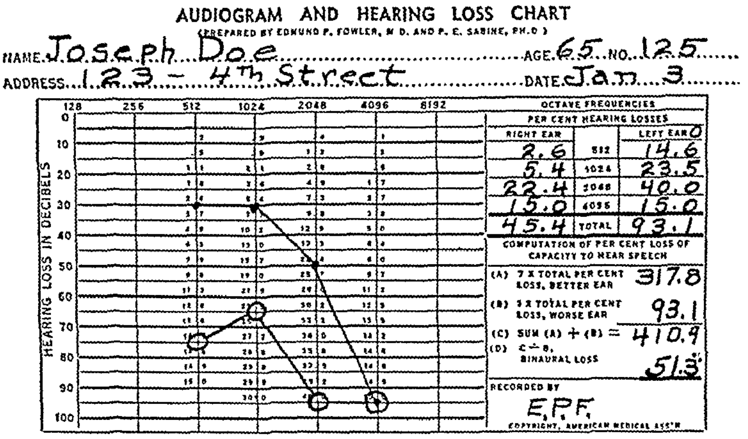
The percentages that are shown on the charts were arrived at from quantitative data to be found in selected references.[1]

The foregoing is recommended as a tentative standard procedure based on present knowledge of the relation between the audiometrically measured acuity of hearing and the capacity to hear direct speech in a familiar language.

This procedure is subject to revision when further authoritative data on the problem become available.

SAMPLE PROBLEM

Assuming that the physician is fully acquainted with the technic of measuring the decibel loss of hearing by means of an accepted audiometer, points are plotted as shown in charts 1 and 2.


AUDIOGRAM AND HEARING LOSS CHART
(PREPARED BY EDMUND P. FOWLER, M.D. AND P. E. SABINE, PH.D.)

NAME Joseph Doe AGE 65 NO. 125
ADDRESS 123 – 4th Street DATE Jan. 3

OCTAVE FREQUENCIES		
PER CENT HEARING LOSSES		
RIGHT EAR		LEFT EAR ○
2.6	512	14.6
5.4	1024	23.5
22.4	2048	40.0
15.0	4096	15.0
45.4	TOTAL	93.1

COMPUTATION OF PER CENT LOSS OF CAPACITY TO HEAR SPEECH

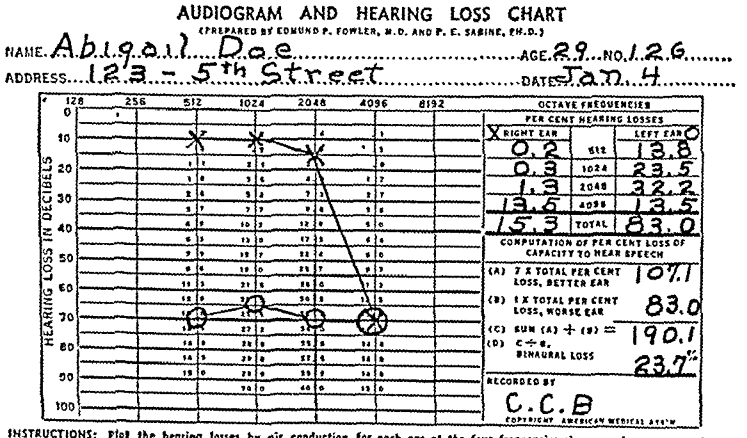
(A) 7 X TOTAL PER CENT LOSS, BETTER EAR 317.8
(B) 1 X TOTAL PER CENT LOSS, WORSE EAR 93.1
(C) SUM (A) + (B) = 410.9
(D) C ÷ 8, BINAURAL LOSS 51.3%

RECORDED BY E. P. F.

COPYRIGHT, AMERICAN MEDICAL ASS'N

INSTRUCTIONS: Plot the hearing losses by air conduction for each ear at the four frequencies shown, and connect contiguous points by straight lines. (solid for right—broken for left) The per cent loss assigned to each interval is the figure immediately above the horizontal line. Set down these figures in the four spaces under right and left ear, in the columns to the right of the chart. Add each column and compute the binaural per cent loss of capacity to hear speech, as indicated.

Chart 1.—Sample audiogram chart.


AUDIOGRAM AND HEARING LOSS CHART
(PREPARED BY EDMUND P. FOWLER, M.D. AND P. E. SABINE, PH.D.)

NAME Abigail Doe AGE 29 NO. 126
ADDRESS 123 – 5th Street DATE Jan. 4

OCTAVE FREQUENCIES		
PER CENT HEARING LOSSES		
X RIGHT EAR		LEFT EAR ○
0.2	512	13.8
0.3	1024	23.5
1.3	2048	32.2
13.5	4096	13.5
15.3	TOTAL	83.0

COMPUTATION OF PER CENT LOSS OF CAPACITY TO HEAR SPEECH

(A) 7 X TOTAL PER CENT LOSS, BETTER EAR 107.1
(B) 1 X TOTAL PER CENT LOSS, WORSE EAR 83.0
(C) SUM (A) + (B) = 190.1
(D) C ÷ 8, BINAURAL LOSS 23.7%

RECORDED BY C. C. B

COPYRIGHT AMERICAN MEDICAL ASS'N

INSTRUCTIONS: Plot the hearing losses by air conduction for each ear at the four frequencies shown, and connect contiguous points by straight lines. (solid for right—broken for left) The per cent loss assigned to each interval is the figure immediately above the horizontal line. Set down these figures in the four spaces under right and left ear, in the columns to the right of the chart. Add each column and compute the binaural per cent loss of capacity to hear speech, as indicated.

Chart 2.—Sample audiogram chart.

The charts illustrate two differing symbols for plotting the right ear, chart 1 using the dot (.), and chart 2 using the x.

HISTORICAL NOTE

In 1938 the lack of uniformity in the methods that were employed for estimating the percentage loss of hearing for speech, as pointed out by courts of law, insurance companies, compensation courts and others, caused the Consultants on Audiometers and Hearing Aids of the Council on Physical Medicine to formulate a method for the consideration of otologists and physicians.

The House of Delegates at its annual meeting in 1939 approved the action of the Consultants for the standardization of tests and the preparation of a method for estimating the percentage loss of hearing.

The method was indorsed by the Consultants and was adopted by the Council on Physical Medicine and the Section on Laryngology, Otology and Rhinology at the annual session of the American Medical Association in 1942 and by the House of Delegates at its annual meeting in Atlantic City in June 1942. At the time at which the procedure was compiled and adopted the Consultants on Audiometers and Hearing Aids were C. D. Bunch (deceased), George M. Coates, Edmund P. Fowler, W. E. Grove, Isaac H. Jones, W. MacFarland, C. Stewart Nash, Horace Newhart (deceased), Paul E. Sabine and W. E. Wheery (deceased).

A description of the procedure was first published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Aug. 1, 1942, volume 119, pages 1108 and 1109.

At the time when the method was compiled the Consultants realized that it might require readjustment. Therefore specialists in otology were encouraged to try the procedure in the course of their regular office practice and compare the resultant calculations with whatever additional information might come to their attention. In short, physicians were asked to give the procedure a practical test. Certain shortcomings were reported, and in 1943 and 1944 the Consultants reviewed their work and recommended certain revisions. Comparison of the revised chart with the former one will indicate that the revised chart is simpler to use and requires less arithmetic to arrive at the per cent of loss of hearing. For equal binaural losses, the percentage figures correspond closely with those used in Dr. Fowler's method. The major part of the work in connection with the revision of the chart was performed by Dr. E. P. Fowler and Dr. Paul E. Sabine. At present the members of the Consultants on Audiometers and Hearing Aids are Drs. Gordon Berry, Hallowell Davis, E. P. Fowler, W. E. Grove, Isaac H. Jones, Dean Lierle, Moses H. Lurie, Douglas Macfarlan, C. Stewart Nash and Paul E. Sabine.

---

[1] (*a*) Bunch, C. D.: Usable Hearing, Ann. Otol., Rhin. & Laryng. **49:** 359 (June) 1940. (*b*) Fletcher, H.: Speech and Hearing, New York, D. Van Nostrand Company, Inc., 1929, pp. 158 and 136. (*c*) Fowler, E. P.: A Simple Method of Measuring Percentage of Capacity for Hearing Speech: Fundamental Factors in Setting Up a Standard, Arch. Otolaryng. **36:** 874 (Dec.) 1942; (*d*) A Method of Measuring the Percentage of Capacity for Hearing Speech, J. Acoust. Soc. America **13:** 373 (April) 1942; (*e*) The Percentage of Capacity to Hear Speech and Related Disabilities, Laryngoscope; Tr. Am. Otol. Soc., to be published. (*f*) Knudsen, V. O.: The Sensitivity of the Ear to Small Differences of Intensity and Frequency, Phys. Rev. **21:** 84 (Jan.) 1923. (*g*) Sabine, P. E.: Estimating the Percentage Loss of Useful Hearing, Tr. Am. Acad. Ophth. (1941) **46:** 179 (March-April) 1942. (*h*) Steinberg, H. C., and Gardner, M. G.: On the Auditory Significance of the Term Hearing Loss, J. Acoust. Soc. America **11:** 270 (Jan.) 1940.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - CHICAGO 10, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - : Eight dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, FEBRUARY 8, 1947

DEPARTMENT OF HEALTH, EDUCATION AND SECURITY

A brief editorial reference was made in THE JOURNAL January 18 to pending legislation in Congress, introduced by Senator Fulbright and Senator Taft as S. 140, to create an executive department of the government to be known as the Department of Health, Education and Security. A similar bill is pending in the House, H. R. 573, introduced by Representative Harris, Arkansas. This proposal is of much importance to American medicine.

At the head of the new department would be a Secretary of Health, Education and Security appointed by the President by and with the advice and consent of the Senate. The qualifications to be possessed by the Secretary are not stated. In the department there would be three main divisions, each under the immediate supervision of an Under Secretary, a Division of Health, a Division of Education and a Division of Security. The Under Secretary of Health would be a doctor of medicine licensed to practice medicine or surgery in one of the states or territories of the United States or in the District of Columbia, and would perform "such duties concerning health as may be prescribed by the Secretary or required by law." Thus, apparently, the duties of the Under Secretary of Health, who must be a doctor of medicine, will in part be prescribed by the secretary of the department, whose qualifications are not set forth in the bill. Too, one section of the bill would authorize the secretary to delegate to any officer, board or employee of the department any of his functions, powers and duties except that the function of promulgating or approving regulations may be delegated only to an under secretary. Presumably this authority to delegate functions includes the right to delegate the prescribing of the duties to be performed by the Under Secretary of Health.

Provision is made for the appointing by the secretary of advisory committees to advise and consult with him, the membership of which must include such persons not otherwise employed by the federal government as in his judgment are most representative of voluntary organizations operating in the respective fields with relation to which such committees may be appointed.

Generally stated, the new department would be authorized to promote the general welfare by aiding and fostering programs in the field of health, education and security, and related services contributing to individual, family and community well-being. These objectives would be carried out, it is contemplated, to the "fullest possible extent through state and local agencies, public and voluntary, and in such manner as to preserve and protect to the highest possible degree the independence and autonomy of state and local agencies, public and voluntary, in education, health, security and related fields."

Specifically, the department would be authorized to—

(*a*) aid, stimulate and encourage the development throughout the nation of services and facilities, both public and voluntary, in the fields of health, education, security and related fields;

(*b*) promote, foster and encourage state, community and voluntary activity in those fields;

(*c*) advise and cooperate with other departments and agencies of the federal government, with state governments and agencies and with voluntary agencies functioning in those fields;

(*d*) collect and analyze statistics and make studies, investigations and reports on conditions, problems and needs in those fields in the United States and in other countries, and disseminate and make available information in those fields;

(*e*) make reports and recommendations with respect to the most effective policies and methods for the promotion of health, education, security and related services, including recommendations with respect to legislation and matters of administrative policy;

(*f*) advise and cooperate with international organizations functioning in those fields; and

(*g*) administer such federal programs, including grants-in-aid, and such powers, functions and duties in those fields as are assigned to it or provided through this or subsequent legislative enactment.

The office of the federal security administrator and the Federal Security Agency, and its constituent units, together with all their functions, would be transferred to the department and, subject to the exceptions noted, would be allocated, distributed and administered under the direction and supervision of the secretary, who would be authorized to abolish such office and agency and any such unit in the interest of administrative efficiency.

To the Division of Health would be specifically transferred the U. S. Public Health Service, the Freedmen's Hospital, the Food and Drug Administration and the Federal Board of Hospitalization. To the Division of Security, the under secretary of which will be a person experienced in the field of social security and welfare, will be transferred the Committee on Economic Security and the Children's Bureau. The Office of Education and the functions of the Federal Security Agency relating to the administration of Howard University and the Columbia Institution for the Deaf will be transferred to the Division of Education.

Essentially, it would seem that the effect of this legislation would be to transform the Federal Security Agency with its various and not too closely related functions into an executive department with a relocation of the several functions of that agency. While the House of Delegates has repeatedly urged that a national department of health be established, it has recognized the dangers incident to the mingling in one department of health and other functions. At a special meeting held in 1937 at a time when the reorganization of governmental activities in the executive departments was under consideration, the Board of Trustees prepared a statement expressing the opinion that "health activities of the government, except those concerned with the military establishments, should not be subservient to any other departmental interests." This action of the Board of Trustees was approved by the House of Delegates at its meeting in Atlantic City in June 1937.

The pending bill, if enacted, might serve to bring about such subserviency; its consideration by the Congress will demand close attention by the medical profession.

THE "PERSONAL EQUATION" IN THE INTERPRETATION OF A CHEST ROENTGENOGRAM

In 1944 the Veterans Administration instituted a study of the effectiveness of roentgenologic methods for tuberculosis case finding. Attempts to evaluate the relative efficiency of various sizes of film demonstrated that there is considerable inconsistency of interpretation of chest roentgenograms among expert radiologists and chest specialists. Indeed, not one of the observers was consistent with himself when he interpreted a second time the same films on which he had originally made supposedly final observations.

The Veterans Administration, faced with the problem of filing and evaluating millions of chest films of veterans, appointed this Board of Roentgenology to evaluate the diagnostic efficiency of the various sizes of film which had been used by the armed forces. This board, whose results are published in this issue of THE JOURNAL,[1] was composed of two radiologists and three chest specialists of repute. Assisting these men in the statistical aspects of their work was a medical statistician of the U. S. Public Health Service. Because of the thoroughness and integrity of this prolonged investigation, the conclusions of the research merit close scrutiny and indicate the desirability of similar future studies.

In the course of this study 1,200 conventional 14 by 17 inch celluloid films were available. The five readers read all the films independently, and their results were tabulated. At a later date each reader interpreted the same films again.

The interindividual variation, or the failure of an individual reader to be consistent with other readers, had great magnitude. For example, on reading the 14 by 17 inch films, one reader called 59 films "positive"; another reader called 31 per cent of these 59 films "negative"; another found 29 per cent of the 59 "negative," and still another found 14 per cent "negative."

The intraindividual variation, or the failure of a reader to be consistent with himself in two independent readings, is even more astonishing. One reader found 59 films "positive" on the first reading of 14 by 17 inch celluloid films, and on the second reading of the same films he found as many as 78 "positives," and these did not include all of his original 59 "positives."

Apprised of these observations, other radiologists and chest specialists, believing that their interpretations would not reveal such discrepancy, undertook smaller scale studies of these films. The error of these incidental trials was as great as and in many instances greater than that encountered in the original research.

These discrepancies demand serious consideration. Further refinements and details are available in the article itself. Error resulting from the "personal equation" exists in all fields of knowledge; but it is only in those in which the evidence is measurable that its magnitude has been demonstrated. Probably in fields in which the evidence cannot be measured the occurrence of error will be at least as frequent as it is in radiology. Indeed, significant studies have shown the limitations of human perception. Such researches as those of Yule,[2] Pearson,[3] Berkson, Magath and Hurn [4] and Derryberry [5] expose discrepancies as astonishing as those here reported of roentgenology. It was shown that in many objective activities, such as the judgment of the most simple characteristics of hybrid corn, estimate of blood cell count, and the determination of malnutrition in children, dependable consistency of judgment was not present.

Reflection and memory restore our confidence. There has been a tendency to assume that roentgenology is an exact science and that the objectivity of the medium defied error. Complacency has been a consequence of such assumption.

Conditions *inherent in the* x-ray *image* tend to minimize the shock to confidence of these results.

---

[1] Birkelo, C. C.; Chamberlain, W. Edward, Phelps, Paul; Schools, Percy E., Zacks, David, and Yerushalmy, Jacob A Comparison of the Effectiveness, for Tuberculosis Case Finding, of Various Roentgenographic and Photofluorographic Methods, this issue, p 359

[2] Yule, G. U On the Influence of Bias and Personal Equation in Statistics of Ill Defined Qualities, J Anthropol Inst **36:** 325, 1906

[3] Pearson, K · The Mathematical Theory of Errors of Judgment, with Special Reference to the Personal Equation, Phil Tr Roy. Soc, **198:** 235, 1902.

[4] Berkson, J, Magath, T B, and Hurn, M The Error of Estimate of the Blood Cell Count as Made with the Hemocytometer, Am J. Physiol. **128:** *309 (Jan) 1940*

[5] Derryberry, M. Reliability of Medical Judgments on Malnutrition, Pub Health Rep **53:** 263, 1938

Every x-ray shadow represents a projection on a two dimensional surface of an accumulation of details in a three dimensional object. Such a spatial condition must necessarily make for distortions that will confuse appearance and reality and, in eliminating the depth factor, diffuse observable foci.

Then again it must be remembered that, in spite of the limitations enforced on roentgenologic diagnosis by the "personal equation," almost all gross pathologic change is visualized by the roentgenogram and does not escape the scrutiny of the competent observer. Indeed, long experience has shown that in diseases of the chest the roentgenogram finds the significant cases and serves as the principal tool of diagnosis.

There is courage of a unique order in this self examination of professional conscience and competence. What other profession, trade or business submits itself voluntarily to such analysis? The experiment has encouraged the drive toward perfection and hastened progress!

RESEARCH AND MEDICAL PROGRESS

In a recent address Goodpasture[1] indicates that financial support of research has come heretofore largely from universities, philanthropic foundations, industry and government. Available funds from the first two sources are no longer adequate to meet increasing demands. Their inadequacy is reflected in a tendency to support short term projects of developmental character rather than of fundamental nature. Great risk and unavoidable financial waste are associated with exploratory research. Industry has profited greatly from the results of fundamental research but has not devised means of affording a commensurate free financial aid to universities, except for that granted by certain individual philanthropic industrialists.

The need is great for free and fluid funds in sufficient quantity to support advanced training so that the risks of original fundamental research may be taken as needed. The only support of this magnitude visible today is public or government funds. Support from this source, however, might encounter difficulties in the selection of projects and be subject to political interests. Goodpasture contends that the privilege and responsibility of determining the trends of research, the training of scientists and the extent and quality of the result should rest with the university faculty. They should be able to take the scientific risks and meet the cost of any waste. Public funds can meet this need not only by grants-in-aid for definite research but also by grants to the faculties, to be spent at their own discretion.

Medicine, Goodpasture emphasizes, is dedicated to the service of man and not to a social order. "Let each social order therefore give the scientist a free hand," he pleads, "and provide him with the environment and the tools he needs; make him accessible to students, for he is essentially a teacher; make the university his home; and otherwise, for humanity's sake, leave him alone."

Medical science and social reorientation have greatly influenced the environment of the medical practitioner. Public health measures, based on bacteriology and immunology, and industrial hazards are now in the sphere of public responsibility. Problems in nutrition are rapidly coming into the same domain. As his duties take the physician from the home to the hospital ward, social agencies expand to perform some of his former tasks.

Large scale support of medical research by public funds is already in existence. Van Slyke[2] has outlined the plan of U. S. Public Health Service research grants to independent scientists. This program recognizes ". . . the integrity and independence of the research worker and his freedom from control, direction, regimentation and outside interference." A total of 264 research projects in 77 institutions, supported by $3,900,000, have been approved within its first year of operation. A definite attempt is made to support fundamental research. The program seems to meet most of the ideal standards proposed by Goodpasture, but it appears to retain some of the hazards inherent in grants-in-aid for specific projects. This program fails, moreover, to provide the free fluid funds under the control of faculties which Goodpasture advocated. Perhaps, to a certain degree, the scientists who constitute the membership of the national advisory councils and the study sections may be regarded as the faculties.

Another program of government support of research is that outlined by Powers.[3] Through its office of naval research the Navy Department subsidizes basic research on a large scale in university and industrial laboratories. The War Department does likewise through various organizations. The funds available for research for this year are about $70,000,000 for each service. Some of these federal funds are devoted to medical research. These research organizations were begun in 1946 at a time when there was lack of agreement among scientists as to the best form and function of a National Science Foundation. No doubt the present Congress will take additional steps toward establishing a National Science Foundation.

Thus 1946 witnessed a great expansion of federal subsidy of medical research. The full impact of this program is not yet felt. One deficiency in the overall program may be inadequate opportunities for training young scientists. The effects of the federal support of projects on the quality of university faculties will be observed with great interest. How well the present programs strike a balance between support of basic, fundamental research and developmental research should be revealed soon.

---

[1] Goodpasture, E. W.: Research and Medical Practice, Science **104**: 473 (Nov. 22) 1946.

[2] Van Slyke, C. J.: New Horizons in Medical Research, Science **104**: 559 (Dec. 13) 1946.

[3] Powers, P. N.: A National Science Foundation? Science **104**: 614 (Dec. 27) 1946.

RETIREMENT OF CIVILIAN OFFICERS OF THE ARMY

Last year both the Reserve Officers Association and the National Guard Association criticized the machinery of retirement of army officers, claiming discrimination against the civilians who had served with the Army. Resolutions were passed by both organizations charging unfairness and favoritism; indeed, charges were made that laws and regulations were being purposely misinterpreted.

Retirement procedure in the Army is largely a medical function. The officer to be retired is first given a physical survey in a hospital; he then appears before a disposition board, all the members except the recorder being physicians. Finally he appears before a retiring board, with at least two medical members. Medical witnesses familiar with the case are called to testify, and the board proceedings are reviewed by physicians in the War Department. Because of this method of procedure, the censure of the resolutions passed by the two associations would seem to fall on medical shoulders even if it was not so intended.

The complaints were so serious that the War Department appointed a committee to make a careful investigation. The committee was composed of officers from all components and represented various branches of the service. The results of the investigation have never been made public. It is understood, however, that the committee devoted much time to its work and made a thorough and complete investigation. The findings of the committee did not substantiate the charges made by the two organizations. The committee found, however, that medical officers, the vast majority of whom were from civilian life, were conscientious in their work and that their findings were in accord with the laws and regulations governing retirement. Errors may have been made in individual cases, but these were few and were largely matters of professional judgment and opinion.

The committee report should be made public so that even the shadow of suspicion may be removed from the medical members of the Disposition and Retiring boards. The splendid body of men who volunteered their services in the war effort certainly did not indulge in double dealing or chicanery.

Current Comment

FEDERAL INCOME TAXES

Elsewhere in this issue of The Journal (page 402) appears the annual statement prepared by the Bureau of Legal Medicine and Legislation to aid physicians in complying with the requirements of the federal income tax law. Contained in it are suggestions as to the deductibility of expenses relating specifically to the practice of medicine, such as dues to medical organizations, traveling expenses incurred in attending medical meetings and subscriptions to medical periodicals. The statement should be read carefully by physicians. According to a recent news item, income tax officials have stated that the majority of physicians do maintain accurate data and faithfully report their incomes. This item disclosed, however, that in one collection district a check of the returns filed by physicians brought to light a number of instances of faulty returns. One physician reputedly agreed to settle his indebtedness out of court, covering a period of almost ten years, for a figure said to be "nearly $1,000,000." Another volunteered to pay $92,000, representing unpaid taxes for several years, plus penalties and interest and by doing so escaped indictment by a federal grand jury.

DELETERIOUS FACTOR IN WHOLE WHEAT BREAD

Hitchens and Falco[1] of the Wellcome Research Laboratories, Tuckahoe, N. Y., showed that mice fed Purina fox chow, Rockland mouse diet or Robinson and Siegel's[2] stock diet are highly susceptible to experimental type I pneumococcus infection. In contrast, mice fed a purified synthetic diet containing all known vitamins and other essential food elements are resistant to 100,000 lethal doses of the same culture. As an explanation of this increased resistance, Hitchens assumed that the crude foodstuffs of commercial diets contain some unknown deleterious factor. This factor is presumably more beneficial to the parasitic growth of the pneumococcus than to the animal consuming the food. Their more recent study[3] concerned the deleterious effects of whole wheat bread. Preliminary tests had shown that aqueous extracts of whole wheat flour are much richer in factors stimulating the in vitro growth of the pneumococcus than control extracts of white flour. One hundred mice were therefore maintained solely on white bread or whole wheat bread for six days before injection with pneumococci. Of the 50 mice maintained on white bread, 20 (or 40 per cent) survived the experimental infection. Of the 49 mice fed exclusively on whole wheat bread, only 1 mouse (or 2 per cent) survived. Presumably there is superiority of white bread over whole wheat bread measured by comparative resistance to experimental pneumococcic infection. For general nutrition, whole wheat is considered by nutritional physiologists superior.

---

[1] Hitchens, G. H., and Falco, E. A.: Proc. Soc. Exper. Biol. & Med. **61:** 54 (Jan.) 1946.

[2] Robinson, H. J., and Siegel, Henry: J. Infect. Dis. **75:** 127 (Sept.-Oct.) 1944.

[3] Hitchens, G. H., and Falco, E. A.: Science **104:** 568 (Dec. 13) 1946.

ORGANIZATION SECTION

THE PHYSICIAN'S FEDERAL INCOME TAX

PREPARED BY THE BUREAU OF LEGAL MEDICINE AND LEGISLATION, AMERICAN MEDICAL ASSOCIATION

Federal income taxpayers on a calendar year basis must on or before March 15 do two things: (1) they must file their final returns for the year 1946 and (2) they must file a declaration of estimated tax for 1947.

WHO MUST FILE RETURNS

A return must be filed by every citizen or resident of the United States whose total gross income in 1946 was $500 or more. Joint returns may be filed by husband and wife if (1) they were married at the end of the year and (2) both were citizens or residents of the United States. Such a joint return may be filed even though one spouse has neither income nor deductions.

WHO MUST FILE DECLARATIONS OF ESTIMATES

In addition to filing the final return for 1946, certain taxpayers must file on or before March 15 a declaration of estimated tax for 1947. Such a declaration must be filed by a taxpayer if—

(1) his gross income from wages or salary subject to withholding can reasonably be expected to exceed the sum of $5,000 plus $500 with respect to each exemption, except his own; or

(2) his gross income which is not subject to withholding can reasonably be expected to exceed $100 for 1947 and his gross income from all sources can reasonably be expected to be $500 or more.

A taxpayer, if necessary, may file one or more amended declarations during 1947 but only one in each calendar quarter. The last such amended declaration must be filed on or before Jan. 15, 1948.

The estimated tax may be payable quarterly as it was in 1946, the final payment becoming due Jan. 15, 1948.

TAX RATES AND EXEMPTIONS

The normal tax rate remains at 3 per cent but after the tentative tax is computed at this rate there is allowed a reduction of 5 per cent of the tax thus computed. The surtax rate begins at 17 per cent of the first $2,000 of surtax net income. As with the normal tax, after the tentative surtax is computed a reduction of 5 per cent of it is permitted by the Revenue Act of 1945. These rates apply in connection with 1946 income. They must also be used in the declaration of estimated tax for 1947, unless rates are changed by the Congress prior to March 15.

For both normal and surtax purposes, the exemptions are in the amount of $500 each for the taxpayer, for his or her spouse, and for each dependent whose gross income is under $500.

The determination as to whether a taxpayer is single or married is made as of the last day of the taxable year. There is no status determination date for dependents, the test being whether the taxpayer furnished over half of the support.

GROSS AND ADJUSTED GROSS INCOMES

Gross Income.—A physician's gross income is the total amount of money received by him during the year for professional services, regardless of the time when the services were rendered for which the money was paid, assuming that the return is on a cash receipts and disbursements basis, plus such money as he has received from investments and from other sources.

If a physician receives a salary as compensation for services rendered and in addition thereto living quarters or meals, the value to the physician of the quarters and meals so furnished ordinarily constitutes income subject to tax. If, however, living quarters or meals are furnished for the convenience of the employer, the value thereof need not be computed and added to the compensation otherwise received by the physician. As a general rule, the test of "convenience of the employer" is satisfied if living quarters or meals are furnished to a physician who is required to accept such quarters and meals in order to perform properly his duties. For example, if a physician employed by a hospital is subject to immediate service at any time during the twenty-four hours of the day and therefore cannot obtain quarters or meals elsewhere without material interference with his duties and on that account is required by the hospital to accept the quarters or meals furnished by it, the value thereof need not be included in the gross income of the physician.

Adjusted Gross Income.—Adjusted gross income is defined to mean gross income minus—

(1) deductions attributable to a trade or business carried on by the taxpayer, if such trade or business does not consist of the performance of services by the taxpayer as an employee;

(2) expenses of travel, meals and lodging while away from home, paid or incurred by the taxpayer in connection with the performance by him of services as an employee;

(3) certain reimbursed expenses in connection with employment;

(4) deductions attributable to property held for the production of rents or royalties;

(5) depreciation or depletion allowed a life tenant of property or to an income beneficiary of property held in trust; and

(6) losses from the sale or exchange of property.

The adjusted gross income is to be used as a basis to determine (1) the limitation on the deduction for charitable contributions (15 per cent of the adjusted gross income), (2) the amount of the deduction for medical expense (excess over 5 per cent of adjusted gross income), (3) the amount of the optional standard deduction the taxpayer may elect to take (10 per cent of adjusted gross income in certain income brackets), (4) exemptions in certain cases where joint returns are filed by husband and wife and (5) if the taxpayer may take advantage of the optional tax table devised for incomes under $5,000.

OPTIONAL TAX TABLE

If a taxpayer has an adjusted gross income of less than $5,000, he may if he so elects compute his tax by using the optional or alternative tax table. This table allows for the normal tax and surtax exemptions and for nonbusiness deductions approximating 10 per cent of the adjusted gross income. The election may be exercised irrespective of the source of the income. This table may not be used if the adjusted gross income of the taxpayer is $5,000 or more but in such cases an optional flat $500 deduction may be claimed in lieu of nonbusiness deductions generally, such as charitable contributions, interest and taxes. Such a taxpayer may elect to exercise this option or he may itemize such deductions as in prior years. The taxpayer who reports an adjusted gross income of less than $5,000 a year will not be allowed the standard deduction as a separate item. Its benefits may be obtained only by using the optional tax table, which, as already indicated, assumes that the user of the table is entitled to a deduction approximating 10 per cent of his adjusted gross income.

PHYSICIANS IN SERVICE

The fact that a physician is in service does not of itself excuse a failure to file a return or declaration. It is understood, however, that if because of the inaccessibility of the necessary records a physician in service is unable to file a complete return he may file a tentative return on which he must estimate his income, deductions and tax as best he can and indicate on the return his reasons for following the procedure. At a later date, if that procedure is followed, a complete return must be filed and necessary adjustments in tax will be made. What has just been said relates to physicians in service who are stationed in this country.

If a physician in service is on duty outside the United States, no income tax will become due, generally speaking, until the fifteenth day of the sixth month following the month in which the physician ceases, except by reason of death or incompetence, to be a member of the military forces on sea duty or in service outside the continental United States, or the fifteenth day of the third month following the month in which World War II is terminated, whichever may be the earlier. When a physician in service returns to the United States, he should contact his local collector of internal revenue and make arrangements to bring his returns up to date.

The law provides a special exemption for members of the armed forces. For taxable years after 1942 and before the termination of the war, so much of the active service pay as does not exceed $1,500, received as a commissioned officer or a commissioned warrant officer, is excluded from gross income. In addition, the commissioned officer is entitled to the personal exemptions, credits and allowable deductions provided by law. For taxable years after 1940 and before the end of the war all of the pay for active service received by a serviceman below the grade of commissioned officer or commissioned warrant officer is nontaxable. He too is entitled to the other exemptions, credits and deductions.

If ability to make payment is materially impaired by reason of service, deferment of the tax, without interest, until six months after active service terminates can be effected through the office of the collector of internal revenue, under section 513 of the Soldiers' and Sailors' Civil Relief Act. Furthermore, if it causes hardship to meet tax liability after termination of service, additional extension may be obtained under section 700 of that act, by application to the courts, for a period equal to the length of military service, subject to the requirement of periodic payment, with interest at 6 per cent.

The Revenue Act of 1945 grants further extension of time for payment, without interest, of any tax attributable to service pay for any taxable year beginning after Dec. 31, 1939 and before Jan. 1, 1947. The payment of the tax, if proper application is made, will be extended for thirty-six months, payable in twelve equal quarterly instalments. In the case of regular officers this extension operates only when the tax has been deferred by reason of sea or oversea duty. Application for the extension must be filed before the first instalment date which the law fixes as follows: If the release from active duty was prior to Dec. 1, 1945, the first instalment date was May 15, 1946; (2) if released on or after Dec. 1, 1945 the first instalment date will be June 15, 1947 or the fifteenth day of the sixth month which begins after the date of release from active duty, whichever is earlier. A similar extension can be had in connection with the payment of the tax attributable to earned income of the years 1940 and 1941 which became due after entry into service. Earned income for this purpose cannot exceed $14,000.

Any tax owed by a member of the military or naval forces who dies in service will be canceled, this relief being retroactive to Dec. 7, 1941. If the tax has already been assessed at the time of the death of the person in service it will be abated. If the tax has already been collected it will be refunded as overpayment. This tax forgiveness applies only to income taxes and not to the estate tax.

The cost of equipment of an army officer or navy officer is deductible only to the extent that it is especially required for his profession and does not merely take the place of articles required in civilian life. The cost of uniforms is considered a personal expense and hence not deductible. The cost of gold braid and cap devices required by regulations of the Navy to be worn on the clothing of a naval officer has been held to constitute an expense necessited by reason of his profession as an officer and to be deductible as a business expense.

DEDUCTIONS FOR PROFESSIONAL EXPENSES

A physician is entitled to deduct all current expenses necessary in carrying on his practice. The taxpayer should make no claim for the deduction of expenses unless he is prepared to prove the expenditure by competent evidence. So far as practicable, accurate itemized records should be kept of expenses and substantiating evidence should be carefully preserved. The following statement shows what such deductible expenses are and how they are to be computed:

Office Rent.—Office rent is deductible. If a physician rents an office for professional purposes alone, the entire rent may be deducted. If he rents a building or apartment for use as a residence as well as for office purposes, he may deduct a part of the rental fairly proportionate to the amount of space used for professional purposes. If the physician occasionally sees a patient in such dwelling house or apartment, he may not, however, deduct any part of the rent of such house or apartment as professional expense; to entitle him to such a deduction he must have an office there, with regular office hours. If a physician owns the building in which his office is located, he cannot charge himself with "rent" and deduct the amount so charged.

Office Maintenance.—Expenditures for office maintenance, as for heating, lighting, telephone service and the services of attendants, are deductible.

Supplies.—Payments for supplies for professional use are deductible. Supplies may be fairly described as articles consumed in the using; for instance, dressings, clinical thermometers, drugs and chemicals. Professional journals may be classified as supplies and the subscription price deducted. Amounts currently expended for books, furniture and professional instruments and equip-may not be used if the adjusted gross income of the taxpayer is $5,000 or more but in such cases an optional flat $500 deduction may be claimed in lieu of nonbusiness deductions generally, such as charitable contributions, interest and taxes. Such a taxpayer may elect to exercise this option or he may itemize such deductions as in prior years. The taxpayer who reports an adjusted gross income of less than $5,000 a year will not be allowed the standard deduction as a separate item. Its benefits may be obtained only by using the optional tax table, which, as already indicated, assumes that the user of the table is entitled to a deduction approximating 10 per cent of his adjusted gross income.

PHYSICIANS IN SERVICE

The fact that a physician is in service does not of itself excuse a failure to file a return or declaration. It is understood, however, that if because of the inaccessibility of the necessary records a physician in service is unable to file a complete return he may file a tentative return on which he must estimate his income, deductions and tax as best he can and indicate on the return his reasons for following the procedure. At a later date, if that procedure is followed, a complete return must be filed and necessary adjustments in tax will be made. What has just been said relates to physicians in service who are stationed in this country.

If a physician in service is on duty outside the United States, no income tax will become due, generally speaking, until the fifteenth day of the sixth month following the month in which the physician ceases, except by reason of death or incompetence, to be a member of the military forces on sea duty or in service outside the continental United States, or the fifteenth day of the third month following the month in which World War II is terminated, whichever may be the earlier. When a physician in service returns to the United States, he should contact his local collector of internal revenue and make arrangements to bring his returns up to date.

The law provides a special exemption for members of the armed forces. For taxable years after 1942 and before the termination of the war, so much of the active service pay as does not exceed $1,500, received as a commissioned officer or a commissioned warrant officer, is excluded from gross income. In addition, the commissioned officer is entitled to the personal exemptions, credits and allowable deductions provided by law. For taxable years after 1940 and before the end of the war all of the pay for active service received by a serviceman below the grade of commissioned officer or commissioned warrant officer is nontaxable. He too is entitled to the other exemptions, credits and deductions.

If ability to make payment is materially impaired by reason of service, deferment of the tax, without interest, until six months after active service terminates can be effected through the office of the collector of internal revenue, under section 513 of the Soldiers' and Sailors' Civil Relief Act. Furthermore, if it causes hardship to meet tax liability after termination of service, additional extension may be obtained under section 700 of that act, by application to the courts, for a period equal to the length of military service, subject to the requirement of periodic payment, with interest at 6 per cent.

The Revenue Act of 1945 grants further extension of time for payment, without interest, of any tax attributable to service pay for any taxable year beginning after Dec. 31, 1939 and before Jan. 1, 1947. The payment of the tax, if proper application is made, will be extended for thirty-six months, payable in twelve equal quarterly instalments. In the case of regular officers this extension operates only when the tax has been deferred by reason of sea or oversea duty. Application for the extension must be filed before the first instalment date which the law fixes as follows: If the release from active duty was prior to Dec. 1, 1945, the first instalment date was May 15, 1946; (2) if released on or after Dec. 1, 1945 the first instalment date will be June 15, 1947 or the fifteenth day of the sixth month which begins after the date of release from active duty, whichever is earlier. A similar extension can be had in connection with the payment of the tax attributable to earned income of the years 1940 and 1941 which became due after entry into service. Earned income for this purpose cannot exceed $14,000.

Any tax owed by a member of the military or naval forces who dies in service will be canceled, this relief being retroactive to Dec. 7, 1941. If the tax has already been assessed at the time of the death of the person in service it will be abated. If the tax has already been collected it will be refunded as overpayment. This tax forgiveness applies only to income taxes and not to the estate tax.

The cost of equipment of an army officer or navy officer is deductible only to the extent that it is especially required for his profession and does not merely take the place of articles required in civilian life. The cost of uniforms is considered a personal expense and hence not deductible. The cost of gold braid and cap devices required by regulations of the Navy to be worn on the clothing of a naval officer has been held to constitute an expense necessited by reason of his profession as an officer and to be deductible as a business expense.

DEDUCTIONS FOR PROFESSIONAL EXPENSES

A physician is entitled to deduct all current expenses necessary in carrying on his practice. The taxpayer should make no claim for the deduction of expenses unless he is prepared to prove the expenditure by competent evidence. So far as practicable, accurate itemized records should be kept of expenses and substantiating evidence should be carefully preserved. The following statement shows what such deductible expenses are and how they are to be computed:

Office Rent.—Office rent is deductible. If a physician rents an office for professional purposes alone, the entire rent may be deducted. If he rents a building or apartment for use as a residence as well as for office purposes, he may deduct a part of the rental fairly proportionate to the amount of space used for professional purposes. If the physician occasionally sees a patient in such dwelling house or apartment, he may not, however, deduct any part of the rent of such house or apartment as professional expense; to entitle him to such a deduction he must have an office there, with regular office hours. If a physician owns the building in which his office is located, he cannot charge himself with "rent" and deduct the amount so charged.

Office Maintenance.—Expenditures for office maintenance, as for heating, lighting, telephone service and the services of attendants, are deductible.

Supplies.—Payments for supplies for professional use are deductible. Supplies may be fairly described as articles consumed in the using; for instance, dressings, clinical thermometers, drugs and chemicals. Professional journals may be classified as supplies and the subscription price deducted. Amounts currently expended for books, furniture and professional instruments and equip-

The excise taxes imposed on employers by section 804, title VIII, and section 901, title IX, of the Social Security Act, commonly referred to as old age and unemployment benefit taxes, are deductible annually by employers in computing net income for federal income tax purposes. If the taxpayer's return is made on a cash basis, as are the returns of practically all physicians, the taxes are deductible for the year in which they are actually paid. If the return is made on an accrual basis, the taxes are deductible for the year in which they accrue, irrespective of when they are actually paid. Employees, including physicians whose employment brings them within that category, may not deduct the tax imposed on them by section 801, title VIII, of the Social Security Act, generally referred to as the old age benefits tax. If, however, the employer assumes payment of the employee's tax and does not withhold the amount of the tax from the employee's wages, the amount of the tax so assumed may be deducted by the employer, not as a tax paid but as an ordinary business expense.

Medical Expense.—A taxpayer may deduct amounts expended for medical, dental and hospital care for himself, his spouse or a dependent, not compensated for by insurance or otherwise, including amounts paid for accident and health insurance, according to a prescribed formula. Deductions will be permitted to the extent that such expenses exceed 5 per cent of the adjusted gross income of the taxpayer but not in excess of $2,500 in case of a taxpayer with more than one exemption, or $1,250 in case of a taxpayer with only one exemption.

Laboratory Expenses.—The deductibility of the expenses of establishing and maintaining laboratories is determined by the same principles that determine the deductibility of corresponding professional expenses. Laboratory rental and the expenses of laboratory equipment and supplies and of laboratory assistants are deductible when under corresponding circumstances they would be deductible if they related to a physician's office.

Losses by Fire or Other Causes.—Loss of and damage to a physician's equipment by fire, theft or other cause, not compensated by insurance or otherwise recoverable, may be computed as a business expense and is deductible, provided evidence of such loss or damage can be produced. Such loss or damage is deductible, however, only to the extent to which it has not been made good by repair and the cost of repair claimed as a deduction.

Insurance Premiums.—Premiums paid for insurance against professional losses are deductible. This includes insurance against damages for alleged malpractice, against liability for injuries by a physician's automobile while in use for professional purposes, and against loss from theft of professional equipment and damage to or loss of professional equipment by fire or otherwise. Under professional equipment is to be included any automobile belonging to the physician and used for strictly professional purposes.

Expense in Defending Malpractice Suits.—Expense incurred in the defense of a suit for malpractice is deductible as a business expense.

Sale of Spectacles.—Oculists who furnish spectacles, etc., may charge as income money received from such sales and deduct as an expense the cost of the article sold.

Washington Letter

(From a Special Correspondent)

Feb. 5, 1947.

Training of Six Hundred in Psychiatric Work Advocated by Mental Health Council

The National Advisory Mental Health Council, meeting here, has approved the training this year of six hundred psychiatric personnel, including one hundred and fifty psychiatrists and the same number in the related fields of psychology, psychiatric social work and nursing. The program was adopted to meet a national shortage of psychiatric personnel. Dr. Edward A. Strecker of Philadelphia, head of the council's training committee, said that the figure seemed inadequate in view of his estimate that "we have less than one third of the psychiatrists needed to meet the minimum psychiatric needs of the country."

Federal Officials Puzzled by Large United States Consumption of Sleeping Pills

Government officials are reported to be puzzled by the heavy consumption of sleep-producing barbiturate drugs each year. Experts say that the 1945 production of 582,000 pounds was enough to put every American man, woman and child to sleep each night for two weeks. The pharmaceutical and drug industry, represented by the National Drug Trade Council, is campaigning for stronger controls and has sponsored a model law before state legislatures. Representative Rogers of Massachusetts has introduced a bill in Congress to place barbiturate compounds under the Federal Narcotics Act.

Delays in Providing Hospitalization for Veterans

Representative Rogers of Massachusetts has announced that the House Veterans Committee, of which she is chairman, will investigate the adequacy of hospitals operated by the Veterans Administration. A subcommittee, headed by Representative Kearney, New York Republican, will check on complaints that former servicemen are required to wait too long for hospitalization. Mrs. Rogers declares that an acute shortage of hospital beds for women veterans exists, despite repeated requests for more. She stated: "We set aside 500 million dollars for veterans' medical research and care three years ago when we passed the GI bill of rights, and I'd like to see that program taking shape."

Convictions Against Eight Limb Manufacturers Reversed by Court

The United States Court of Appeals has reversed antitrust convictions which were handed down in district court last May against eight artificial limb manufacturers. The five corporations and three individuals involved in the reversal were among eighty indicted for conspiracy to fix the price of artificial limbs in violation of the Sherman Anti-Trust Act. The court based its reversal on "an abuse of discretion" by the trial judge. Sixty-three of the accused had entered pleas of nolo contendere (no contest). Those winning reversals were J. E. Hanger, Inc., of Washington, D. C.; separate corporations of the same name in Illinois, Indiana, Missouri and Texas; Joseph F. Branham, vice president of the Illinois firm; McCarthy Hanger, president of the Missouri corporation, and Hugh H. Hanger, who operates a separate business in Philadelphia.

Outlines Work of World Health Organization

The World Health Organization was created to elevate the physical and mental health of all people, Dr. Frank A. Calderone, director of the headquarters office of the interim group, told delegates to the twenty-first Women's Patriotic Conference on National Defense. He said sixty-one nations had given enthusiastic support to the organization.

National Birth Rate Shows Increase

The U. S. Public Health Service has estimated the number of births registered for the first eleven months of 1946 to 2,922,000, 16 per cent above the 1945 figure. A small increase in deaths was recorded in the same period, the estimated 1,275,000 being 16,000, or 1.3 per cent, more than in 1945 ment, "the useful life of which is short," generally less than one year, may be deducted, but if such articles have a more or less permanent value, their purchase price is a capital expenditure and is not deductible.

Equipment.—Equipment comprises property of a more or less permanent nature. It may ultimately wear out, deteriorate or become obsolete, but it is not in the ordinary sense of the word "consumed in the using."

The cost of equipment such as has been described, for professional use, cannot be deducted as expense in the year acquired. Examples of this class of property are automobiles, office furniture, medical, surgical and laboratory equipment of more or less permanent nature, and instruments and appliances constituting a part of the physician's professional outfit, to be used over a considerable period of time, generally over one year. Books of more or less permanent nature are regarded as equipment and the purchase price is therefore not deductible.

Although the cost of such equipment is not deductible in the year acquired, nevertheless it may be recovered through depreciation deductions taken year by year over its useful life, as described later.

No hard and fast rule can be laid down as to what part of the cost of equipment is deductible each year as depreciation. The amount depends to some extent on the nature of the property and on the extent and character of its use. The length of its useful life should be the primary consideration. The most that can be done is to suggest certain average or normal rates of depreciation for each of several classes of articles and to leave to the taxpayer the modification of the suggested rates as the circumstances of his particular case may dictate. As fair, normal or average rates of depreciation, the following have been suggested: automobiles, 25 per cent a year; ordinary medical libraries, x-ray equipment, physical therapy equipment, electrical sterilizers, surgical instruments and diagnostic apparatus, 10 per cent a year; office furniture, 5 per cent a year.

The principle governing the determination of all rates of depreciation is that the total amount claimed by the taxpayer as depreciation during the life of the article, plus the salvage value of the article at the end of its useful life, shall not be greater than its purchase price. The physician must in good faith use his best judgment and claim only such allowance for depreciation as the facts justify. The estimate of useful life, on which the rate of depreciation is based, should be carefully considered in each individual case.

Medical Dues.—Dues paid to societies of a strictly professional character are deductible. Dues paid to social organizations, even though their membership is limited to physicians, are personal expenses and not deductible.

Postgraduate Study.—The Commissioner of Internal Revenue holds that the expense of postgraduate study is not deductible.

Traveling Expenses.—Traveling expenses, including amounts paid for transportation, meals and lodging, necessarily incurred in professional visits to patients and in attending medical meetings for a professional purpose, are deductible.

Automobiles.—Payment for an automobile is a payment for permanent equipment and is not deductible. The cost of operation and repair, and loss through depreciation, are deductible. The cost of operation and repair includes the cost of gasoline, oil, tires, insurance, repairs, garage rental (when the garage is not owned by the physician), chauffeur's wages, and the like.

Deductible loss through depreciation of an automobile is the actual diminution in value resulting from obsolescence and use and from accidental injury against which the physician is not insured. If depreciation is computed on the basis of the average loss during a series of years, the series must extend over the entire estimated life of the car, not merely over the period in which the car is possessed by the present taxpayer.

If an automobile is used for professional and also for personal purposes—as when used by the physician partly for recreation, or so used by his family—only so much of the expense as arises out of the use for professional purposes may be deducted. A physician doing an exclusive office practice and using his car merely to go to and from his office cannot deduct depreciation or operating expenses; he is regarded as using his car for his personal convenience and not as a means of gaining a livelihood. What has been said in respect to automobiles applies with equal force to horses and vehicles and the equipment incident to their use.

MISCELLANEOUS

Contributions to Charitable Organizations.—For detailed information with respect to the deductibility of charitable contributions generally, physicians should consult the official return blank or obtain information from the collectors of internal revenue or from other reliable sources. An individual taxpayer can deduct such contributions only to the extent that they do not exceed 15 per cent of his adjusted gross income. The physician may not deduct as a charitable contribution the value of services rendered an organization operated for charitable purposes.

Bad Debts.—Physicians who make their returns on a cash receipts and disbursements basis, as most physicians do, cannot claim deductions for bad debts.

Taxes.—Taxes generally, either federal or state, are deductible by the person on whom they are imposed by law. Both real and personal property taxes are deductible; but so-called taxes, more properly assessments, paid for local benefits, such as street, sidewalk and other like improvements, imposed because of and measured by some benefit inuring directly to the property against which the assessment is levied, do not constitute an allowable deduction from gross income. Physicians may deduct state gasoline taxes and state sales taxes. In some states sales taxes are imposed on the seller, but, if they are passed on to the buyer, the latter may deduct them.

State income and use taxes are deductible; federal income taxes are not. Federal import, excise or stamp taxes are deductible only to the extent that they are attributable to business activities. State automobile license fees are deductible. If a state or local fee is imposed for regulatory purposes, and not to raise revenue, the fee may not ordinarily be deducted as a tax. If such fees, however, are classifiable as a business expense, they are deductible as such. Annual registration fees imposed on physicians probably come within the category of regulatory fees and should be deducted as a business expense rather than as taxes. Local and state occupational taxes imposed on physicians are deductible either as taxes or as a business expense, depending on the purpose for which the tax is imposed.

The excise taxes imposed on employers by section 804, title VIII, and section 901, title IX, of the Social Security Act, commonly referred to as old age and unemployment benefit taxes, are deductible annually by employers in computing net income for federal income tax purposes. If the taxpayer's return is made on a cash basis, as are the returns of practically all physicians, the taxes are deductible for the year in which they are actually paid. If the return is made on an accrual basis, the taxes are deductible for the year in which they accrue, irrespective of when they are actually paid. Employees, including physicians whose employment brings them within that category, may not deduct the tax imposed on them by section 801, title VIII, of the Social Security Act, generally referred to as the old age benefits tax. If, however, the employer assumes payment of the employee's tax and does not withhold the amount of the tax from the employee's wages, the amount of the tax so assumed may be deducted by the employer, not as a tax paid but as an ordinary business expense.

Medical Expense.—A taxpayer may deduct amounts expended for medical, dental and hospital care for himself, his spouse or a dependent, not compensated for by insurance or otherwise, including amounts paid for accident and health insurance, according to a prescribed formula. Deductions will be permitted to the extent that such expenses exceed 5 per cent of the adjusted gross income of the taxpayer but not in excess of $2,500 in case of a taxpayer with more than one exemption, or $1,250 in case of a taxpayer with only one exemption.

Laboratory Expenses.—The deductibility of the expenses of establishing and maintaining laboratories is determined by the same principles that determine the deductibility of corresponding professional expenses. Laboratory rental and the expenses of laboratory equipment and supplies and of laboratory assistants are deductible when under corresponding circumstances they would be deductible if they related to a physician's office.

Losses by Fire or Other Causes.—Loss of and damage to a physician's equipment by fire, theft or other cause, not compensated by insurance or otherwise recoverable, may be computed as a business expense and is deductible, provided evidence of such loss or damage can be produced. Such loss or damage is deductible, however, only to the extent to which it has not been made good by repair and the cost of repair claimed as a deduction.

Insurance Premiums.—Premiums paid for insurance against professional losses are deductible. This includes insurance against damages for alleged malpractice, against liability for injuries by a physician's automobile while in use for professional purposes, and against loss from theft of professional equipment and damage to or loss of professional equipment by fire or otherwise. Under professional equipment is to be included any automobile belonging to the physician and used for strictly professional purposes.

Expense in Defending Malpractice Suits.—Expense incurred in the defense of a suit for malpractice is deductible as a business expense.

Sale of Spectacles.—Oculists who furnish spectacles, etc., may charge as income money received from such sales and deduct as an expense the cost of the article sold.

Washington Letter

(From a Special Correspondent)

Feb. 5, 1947.

Training of Six Hundred in Psychiatric Work Advocated by Mental Health Council

The National Advisory Mental Health Council, meeting here, has approved the training this year of six hundred psychiatric personnel, including one hundred and fifty psychiatrists and the same number in the related fields of psychology, psychiatric social work and nursing. The program was adopted to meet a national shortage of psychiatric personnel. Dr. Edward A. Strecker of Philadelphia, head of the council's training committee, said that the figure seemed inadequate in view of his estimate that "we have less than one third of the psychiatrists needed to meet the minimum psychiatric needs of the country."

Federal Officials Puzzled by Large United States Consumption of Sleeping Pills

Government officials are reported to be puzzled by the heavy consumption of sleep-producing barbiturate drugs each year. Experts say that the 1945 production of 582,000 pounds was enough to put every American man, woman and child to sleep each night for two weeks. The pharmaceutical and drug industry, represented by the National Drug Trade Council, is campaigning for stronger controls and has sponsored a model law before state legislatures. Representative Rogers of Massachusetts has introduced a bill in Congress to place barbiturate compounds under the Federal Narcotics Act.

Delays in Providing Hospitalization for Veterans

Representative Rogers of Massachusetts has announced that the House Veterans Committee, of which she is chairman, will investigate the adequacy of hospitals operated by the Veterans Administration. A subcommittee, headed by Representative Kearney, New York Republican, will check on complaints that former servicemen are required to wait too long for hospitalization. Mrs. Rogers declares that an acute shortage of hospital beds for women veterans exists, despite repeated requests for more. She stated: "We set aside 500 million dollars for veterans' medical research and care three years ago when we passed the GI bill of rights, and I'd like to see that program taking shape."

Convictions Against Eight Limb Manufacturers Reversed by Court

The United States Court of Appeals has reversed antitrust convictions which were handed down in district court last May against eight artificial limb manufacturers. The five corporations and three individuals involved in the reversal were among eighty indicted for conspiracy to fix the price of artificial limbs in violation of the Sherman Anti-Trust Act. The court based its reversal on "an abuse of discretion" by the trial judge. Sixty-three of the accused had entered pleas of nolo contendere (no contest). Those winning reversals were J. E. Hanger, Inc., of Washington, D. C.; separate corporations of the same name in Illinois, Indiana, Missouri and Texas; Joseph F. Branham, vice president of the Illinois firm; McCarthy Hanger, president of the Missouri corporation, and Hugh H. Hanger, who operates a separate business in Philadelphia.

Outlines Work of World Health Organization

The World Health Organization was created to elevate the physical and mental health of all people, Dr. Frank A. Calderone, director of the headquarters office of the interim group, told delegates to the twenty-first Women's Patriotic Conference on National Defense. He said sixty-one nations had given enthusiastic support to the organization.

National Birth Rate Shows Increase

The U. S. Public Health Service has estimated the number of births registered for the first eleven months of 1946 to be 2,922,000, 16 per cent above the 1945 figure. A small decrease in deaths was recorded in the same period, the estimate of 1,275,000 being 16,000, or 1.3 per cent, more than in 1945.

Medical Legislation

MEDICAL BILLS IN CONGRESS

Industrial Health Hazards

A bill introduced by Representative Norton, New Jersey, H R 475, *would authorize an annual appropriation of $5,000,000 for the purpose* of enabling the United States, through the Department of Labor, to cooperate with state agencies administering labor laws in the establishment and maintenance of safe and proper working conditions in industry and in the preparation, promulgation and enforcement of regulations to control **industrial health hazards.**

A somewhat similar bill is pending in the Senate introduced by Senator Johnston, South Carolina, for himself and Senator Morse, Oregon, S. 101, the purpose of which is stated to be to "assist the several states in establishing and maintaining **safe working conditions** *in industry and in promoting the observance of safety precautions and* rules by employers and employees in industry"

Medical Administrator in Navy Hospital Corps

A bill has been introduced in the Senate by Senator Gurney, South Dakota, S 238, to establish the commissioned grade of **medical administrator** in the Hospital Corps of the Navy Officers of the grade of medical administrator, it is proposed, will have the rank of captain, commander, lieutenant commander, lieutenant, lieutenant (junior grade) or ensign The total number of medical administrators will not exceed 3 per cent of the authorized strength of the Hospital Corps

G. I. Bill of Rights

A number of bills are pending to amend the Servicemen's Readjustment Act of 1944 with respect to the **education and training of veterans.** One of these S 326, introduced by Senator Pepper, Florida, would, among other things, provide that a veteran while enrolled in and pursuing a course of education or training will be paid a subsistence allowance *of $100 a month* if without a dependent, $125 a month if he has one dependent, and $150 a month, if he has two or more dependents If such a veteran also receives compensation for productive labor, he will be entitled to receive such lesser sums, if any, as subsistence or dependency allowances, as may be determined by the administrator, provided that the rate of such allowance plus the compensation received shall in no event exceed $350 per month for a veteran without a dependent, *$375 per month* if he has one dependent or $400 per month if he has two or more dependents.

Miscellaneous

Senator Gurney, South Dakota, has introduced a bill to **reorganize** ***the Nurse Corps*** *of the Navy and of the Naval Reserve, S. 322.*

Another bill introduced by Senator Gurney, South Dakota, S. 334, proposes to establish a **Medical Associated Sciences Corps** in the Medical Department of the Navy.

The enactment of a **Federal Insecticide, Fungicide and Rodenticide Act** is proposed by H R 1237, introduced by Representative August H Andersen, Minnesota.

Congressman Rogers, Massachusetts, has introduced, by request, H. R. 186, a bill to provide follow-up outpatient **medical treatment for veterans** suffering from non-service connected disabilities for which they have been hospitalized pursuant to laws administered by the Veterans Administration

A bill introduced by Congressman Cole, New York, H R 1275, would authorize the Secretary of the Navy to promulgate regulations providing for the **reimbursement of persons in the naval service** for the cost of emergency or necessary medical services, including hospital service and medicines, from civilian sources when the person receiving the service was in a duty status Such reimbursement will be authorized *only if it is determined that medical service was not available from* a federal source

STATE LEGISLATION

California

Bills Introduced.—A 438, to amend the **chiropractic act,** proposes that no person shall be denied admission to any school of chiropractic or *to examination and licensure* as a chiropractor because of blindness A. 487, to amend the **business and professions code,** proposes that the acceptance by any person licensed under the business and professions code of any rebate, refund, commission or unearned discount, whether in the form of money or otherwise, as compensation for referring patients to any person, firm, corporation or association constitutes unprofessional conduct S. 134, to amend the **Business and Professions Code,** proposes to *authorize* the issuance of a naturopathic physician's certificate and defines naturopathy to include "physiotherapy, manual, mechanical, and manipulative therapy, psychoanalysis, psychotherapy, electricity, non-narcotic herbs, supplemental foods, vitamins, air, water, diet, massage, endocrinology, biochemistry, accident and occupational therapy and all other natural methods consistent with naturopathic science"

Indiana

Bills Introduced—H. 30 proposes to require all **physicians to report** the name, age and address of every person diagnosed as having epilepsy or similar disorder characterized by lapses of consciousness, to the state board of health S 41 proposes the creation of a **board of natural therapeutic physicians.** The practice of natural therapy is defined to mean "analysis and treatment of human ailments, as taught in *naturopathic schools* and colleges and is hereby further defined to mean the use and practice of psychological, mechanical and material health sciences to aid in purifying, cleaning and *normalizing* human tissues for preservation or restoration of health according to the fundamental principles of anatomy, physiology and applied psychology as may be required Naturopathic practice employs, among other agencies, heat, light, water, electricity, psychology, diet, massage and other manipulative methods These agencies are known as psychotherapy, suggestotherapy, hydrotherapy, electrotherapy, mechanotherapy, biochemistry, external applicances, mechanical and electrical appliances, hygiene, heliotherapy and dietetics" S 67 *proposes to authorize the state board* of health to purchase and distribute blood plasma throughout the state, *without charge*

New York

Bills Introduced.—S 227, to amend the law in relation to **prenatal examinations,** proposes that the test shall be for the Rh factor of a pregnant woman as well as for syphilis S 313 proposes the creation of a **board of examiners in massage** and defines massage as "the stroking, kneading, *tapping or rolling* with the hands, or with other instrumentalities, of the human body for hygienic or remedial purposes, for the purposes of relieving, alleviating, or reducing affected parts thereof, but shall not include reduction of a fracture or dislocation of a bone" S 109 proposes **to redefine a podiatrist** as one who "practices podiatry within the meaning of this article who holds himself out as being able to diagnose, treat, operate or prescribe for *any disease,* pain, *injury, deficiency, deformity* or physical condition of the human feet, and/or who shall either offer or undertake by any means or method to diagnose, treat, operate or prescribe for any disease, pain, injury, deficiency, deformity or physical condition of the same within the following limitations operations on the feet shall be limited to minor surgery; the use of anesthesia shall be limited to local *anesthetics* and postoperative sedatives, and podiatrists may not treat other than *local manifestations* in the feet of systemic diseases"

North Dakota

Bill Introduced.—H. 52, to amend the law relating to hospitals, proposes, among other things, rules and regulations for the licensing of maternity homes and maternity hospitals

Oklahoma

Bills Introduced.—H. 50 proposes to make it unlawful for any person engaged in what *is generally known* as the science *or system of the* healing art, or the practice of osteopathy, chiropractic, rubbing or manipulation of muscles, adjustment or any other method, either by hand or by mechanical device, to make or profess to be able to make any diagnosis, anatomical, pathological, differential or by exclusion, of any sickness, illness or disease or to prescribe, require or recommend the taking or use of any drug unless such person shall have the ***requisite qualifications*** *and be admitted to the practice of medicine* as a licensed physician and surgeon in the state of Oklahoma. H. 56 proposes to authorize the state board of medical examiners to *accept* **in lieu of the one year's internship** requirement proof that the applicant for a license was commissioned and served in the armed forces during World War II as a physician or surgeon.

Oregon

Bill Passed.—H 7 passed the house January 22 It proposes to require all physicians licensed by the state board of medical examiners to report immediately to the local *health officer the name, sex, date* of birth and address of every person diagnosed as having **epilepsy,** or similar disorder characterized by momentary or prolonged lapses of consciousness or control, which is or may become chronic

South Dakota

Bill Introduced.—*H. 18 proposes* rules and regulations for the licensing of **chiropractic hospitals,** sanatoriums or related institutions by the board of chiropractic examiners.

Texas

Bills Introduced.—S. 29 proposes an act to require the licensing, inspecting and **regulating of hospitals** and related institutions and to *create a hospital licensing council* S 35 proposes the creation of a **state board of examiners** in the basic sciences, of anatomy, physiology, chemistry, bacteriology, pathology and hygiene and public health and proposes to require that all persons desiring to practice a healing art must first obtain a certificate from such board of examiners. The term healing art is defined to include "any system, treatment, operation, diagnosis, prescription or practice for the ascertainment, cure, relief, *palliation, adjustment* or correction of any human disease, ailment deformity, injury or unhealthy or abnormal physical or mental condition" Exempted from *the proposal* would be licensed dentists optometrists, nurses, chiropodists, masseurs, commissioned or contract surgeons of the United States Army, Navy or Public Health and Marine Hospital Service, and physicians licensed in other states called in consultation in Texas S 59 proposes the creation of a **naturopathic examining board** and defines naturopathy to mean "the use and practice of Drugless Therapy by dietetics, dehydrated foods, phytotherapy, nutritional *mineral and vitamin therapy,* autotherapy, mechanotherapy and mechanical appliances, vibrotherapy, pneumatotherapy, electrotherapy, light therapy—visible and invisible, thermotherapy, cryotherapy, hydrotherapy, and Physical Therapy by articular manipulations, massage, gymnastics; and Psychological Therapy by psychotherapy, suggestotherapy, *zone therapy and neurotherapy, and Radiography.*"

Virginia

Bills Passed.—S. 27-X passed the senate January 16. It proposes the enactment of a **hospital licensing** and inspection law but would exempt therefrom hospitals operated for the practice of the religious tenets of any church in the ministration to the sick and suffering by mental or spiritual means without the use of any drug or material remedy provided the statutes or regulation on sanitation are complied with. S. 28-X passed the senate January 15. It proposes the establishment within the department of health of a division of hospital survey and construction to make a **survey of existing hospitals**, develop a state plan for the construction of nonprofit hospitals in the state etc. The proposal also provides for the appointment of a hospital advisory council and authorizes the commissioner of the state department of health to apply for federal funds to assist in carrying out the survey and planning activities contemplated by the proposal and to receive federal funds in behalf of applicants. S. 31-X passed the senate January 16. It proposes a licensing law for hospitals for the care or treatment of the insane, epileptic or feebleminded persons or persons addicted to the intemperate use of narcotic drugs, alcohol or other stimulants.

West Virginia

Bills Introduced.—H. 50 and S. 50 propose to make it mandatory for every physician practicing in the state **to report in writing to the board of control** the name, age, sex, race, home address and type of disease of every person having tuberculosis who comes under his observation or care H. 51 and S. 51 propose regulations for the **licensing of hospitals**, sanatoriums, rest homes and related institutions.

Wisconsin

Bill Introduced.—A. 52 proposes that any person who shall **torture any animal** of any kind whatsoever shall be deemed guilty of a misdemeanor and proposes further that animals may be used for scientific experimentation and research if not subjected to cruelty or torture. Cruelty and torture are not defined by the proposal.

Council on Medical Service

RURAL ENROLMENT EXPERIENCE

From a Report by

F. K. HELSBY
Director of Surgical Care, Inc.
Kansas City, Mo.

The Blue Cross Hospital Service and Surgical Care, Inc., of Kansas City, Mo. report a typical rural enrolment in their experience as that of Lafayette County, 40 miles from the metropolitan area of Kansas City.

Lafayette County has an approximate population of 28,000 people, and two towns in the county have 5,000 population each, namely Lexington and Higginsville. There are seven other towns in the county with less than 1,000 people in each, some just a store and grain elevator.

Previous to our recent enrolment campaign we had an active medical plan with the Farm Bureau and two firms, a shirt factory and a shoe factory, perhaps ten small retail establishments with less than fifteen employees.

It was decided to conduct an enrolment on a countywide basis, open to every one.

The first step was to present the program to every civic club in the county. The plan representative attended every chamber of commerce, Lions Club, Rotary Club, American Legion or other similar meeting held in a period of two weeks prior to actual enrolment dates. Sponsorship and cooperation were obtained from all these civic bodies.

The next step was to arrange convenient places in each community where applications could be obtained, information supplied and literature distributed. This necessitated a training program with an employee of the bank, doctor's office, grain elevator or the particular business institution designated as an enrolment place.

The third and final step was an advertising campaign designed to bring the people into these places to sign up. This was accomplished mainly by the use of the county weekly newspapers, in the form of both paid-for display advertising and, very important, free news stories on the front pages.

In the final stages a sound truck was used on Saturday nights in the towns. This equipment was donated by the merchants of Higginsville.

Fifteen hundred members were obtained in eight days.

THE MIDDLE ATLANTIC STATES

Regional Conference of the American Medical Association Council on Medical Service

Two years ago the Council on Medical Service began its program of sponsoring conferences in various areas throughout the country. These meetings are generally termed Conferences on Medical Service. Discussion centers on problems in which the five or six states in the area represented are particularly interested. Key speakers are brought to the meeting to lead the discussion.

Last year, in the area including Virginia, Maryland, Delaware, New Jersey, New York and Pennsylvania, the conference members decided on a permanent organization. The Conference selected F. F. Borzell, M.D., Philadelphia, as chairman; Thomas A. McGoldrick, M.D., Brooklyn, as vice chairman, and William Bates, M.D., Philadelphia, as secretary treasurer. This new group set up a schedule of semiannual meetings. Two meetings each year, spring and fall, are to be general conferences on problems of medical service. An executive committee consisting of a representative of each state develops the programs and administers the business of the conference. The various state medical societies have contributed funds for incidental expenses.

The third semiannual meeting of the conference was held in Philadelphia on Thursday, Nov. 21, 1946. The attendance totaled almost fifty, including guest representatives from Ohio and West Virginia.

The program centered around four major subjects with ample opportunity for discussion by those present. Subjects and speakers or moderators were as follows:

Round Table on Medical Problems Involved in the Bituminous Coal Agreement

Moderator: Walter B. Martin, M.D., Norfolk, Va.

Veterans Administration Medical Program

Col. James C. Harding, Veterans Administration

Reports of the States on Veterans Administration Program

Round Table on Proposed Changes in the Taft Bill

Moderators: Frederic J. Quigley, M.D., Union City, N. J., and Louis H. Bauer, M.D., Hempstead, N. Y.

Present Activities of the Council on Medical Service

Thomas A. Hendricks, American Medical Association

This conference and the two earlier conferences have definitely proved of value to those participating. Every effort has been made to keep them from degenerating into purely gab fests and to channel the talks, questions and answers into instructive pros and cons. In general they are designed to make possible a direct exchange of information and ideas between the state medical societies and the American Medical Association.

The "Regional Conferences" are a regular part of the Council's program. The Middle Atlantic States Regional Conference is the first to be organized into a formal, permanent group. Whether this will become the pattern for others remains to be determined. Perhaps other areas will wish to follow this lead.

Coming Medical Meetings

Annual Congress on Medical Education and Licensure, Chicago, Palmer House, Feb. 10-11. Dr. Victor Johnson, 535 N. Dearborn St., Chicago 10, Secretary.

American Association for the Study of Goiter, Atlanta, Ga., April 3-5. Dr. Thomas C. Davison, 478 Peachtree St., N. E., Atlanta 3, Secretary.

Central Surgical Association, Chicago, Feb. 20-22. Dr. Walter G. Maddock, 250 East Superior St., Chicago, Secretary.

Chicago Medical Society Annual Clinical Conference, Chicago, March 4-7. Dr. Willard O. Thompson, 30 N. Michigan Blvd., Chicago 2, Secretary.

Dallas Southern Clinical Society, Dallas, Texas, March 17-20. Dr. Glenn D. Earlson, 1133 Medical Arts Bldg., Dallas, Secretary.

Mid-South Postgraduate Medical Assembly, Memphis, Tenn., Feb. 11-14. Dr. Arthur F. Cooper, 1479 Carr Ave., Memphis, Secretary.

Missouri State Medical Association, Kansas City, March 30-April 2. Mr. Thomas R. O'Brien, 634 N. Grand Blvd., St. Louis 3, Executive Secretary.

New Orleans Graduate Medical Assembly, New Orleans, Feb. 24-27. Dr. Max M. Green, 1430 Tulane Avenue, New Orleans 13, Secretary.

Pacific Coast Surgical Association, Seattle, Feb. 17-18; Victoria, B. C., Feb. 19-21. Dr. F. L. Reichert, Stanford University Hospital, San Francisco, Secretary.

Southwest Allergy Forum, Shreveport, La., March 31-April 1. Dr. Sim Hulsey, 505 Medical Arts Bldg., Fort Worth, Texas, Secretary.

GOVERNMENT SERVICES

ARMY

MODEL OF NEW ARTIFICIAL HAND

Major Gen. Norman T. Kirk, the Surgeon General, announced January 22 a new artificial hand which represents a major advance in the manufacture of prostheses for amputees. This hand is said to be far superior mechanically and cosmetically to anything that has been perfected to date. It has the appearance of a natural hand, whereas heretofore the best that could be provided from a utility standpoint was the hook hand. The new devices will not be on the market until civilian industry gets them into production. This advance has been completed by the Army's Prosthetics Research Laboratory, Army Medical Center, Washington, D. C., although a research program had been started previously in army hospitals throughout the country.

AURAL REHABILITATION CENTER OPENED

The only army center for the rehabilitation of the hard of hearing was formally opened January 19 at the Forest Glen Section of Walter Reed General Hospital, Washington, D. C., where a specially selected and highly trained staff of about 50 has been assembled. Among others the staff comprises 12 instructors in speech reading, 6 technician experts in testing and fitting hearing aids, 6 technicians to teach how to use the device most efficiently, 5 speech correctionists and smaller numbers of specialists in other fields. The center has sufficient staff, space and equipment to care for 250. The "students" will be those who have finished with treatment and surgery and now require rehabilitation. A building has been refitted and remodeled into soundproof rooms, lecture halls, laboratory and offices where the hearing handicapped can have their disability appraised and corrected. It is planned that the eight weeks rehabilitation course will transform every student into an independent adjusted individual capable of resuming his or her place in society with the least possible handicap economically or socially. In the opening ceremony Major Gen. Norman T. Kirk, the Surgeon General, summarized the advances in ng and technic evolved for this type of treatment in the s army centers during the war, which centers have now consolidated into the section at Forest Glen, which e under the direction of Col. Guy A. Owsley, M. C., . S. Army.

THE AIR SURGEON RECEIVES AWARD

The Institute of Aeronautical Sciences, New York, on January 27 presented the John Jeffries Award to Brig. Gen. Malcolm C. Grow, U. S. Army, the Air Surgeon. General Grow graduated from Jefferson Medical College and joined the medical reserve corps as captain in 1917 and was commissioned in the regular corps in 1920. He served in Siberia during the first world war and in the European theater in the second world war, more recently in Guam, and was appointed the Air Surgeon in January 1946 to succeed Major Gen. David N. W. Grant, who retired. For years he carried on experimental work in the development of winter flying clothing. This award is presented annually for outstanding contribution to the advancement of aeronautics through medical research. The recipient is selected by a committee.

DIETITIANS NEEDED NOW BY ARMY

The War Department has announced the immediate need for fifty additional Medical Department dietitians for assignment to army hospitals in the United States and overseas. Initial appointments are made in the grade of second lieutenant, and the salary is $2,160 a year. In addition, 70 cents a day subsistence allowance and quarters are provided. There is a 5 per cent increase in base pay for every three years of service. A 10 per cent increase in base pay is authorized for foreign service. Applicants must be unmarried. An applicant who meets the educational, citizenship and age requirements will be authorized to report (travel at her own expense) at an army post for physical examination.

She must have a degree from an approved college with a major in either foods and nutrition or institution management and must have completed a dietitians' training course approved by the Surgeon General. Two years' experience in a hospital approved by the Surgeon General may be substituted for the training course, provided the experience includes diet therapy, planning menus, supervising employees in food preparation and service, food cost control, and ordering food supplies and equipment. One year of this experience must have been within the last ten years.

Medical Department dietitians are women members of the Medical Department, with commissioned officer status in the Army of the United States. Four hundred Medical Department dietitians are now on duty. Application should be made to the Surgeon General, attention Dietetic Consultants Division, Pentagon Building, Washington 25, D. C.

PSYCHIATRISTS CONFER AT WAR DEPARTMENT

Psychiatrists who are consultants to the Secretary of War met in Washington, January 20-21, to discuss future War Department neuropsychiatric policies, Major Gen. Norman T. Kirk, the Surgeon General, announced. All doctors attending the conference were assigned to active duty in the Army Medical Department during the war.

Dr. William C. Menninger, Topeka, Kan., presided at the meeting; others participating and their panel assignments were:

ORGANIZATION

Dr. Malcolm J. Farrell, chairman, Waverly, Mass.
Dr. Alan Challman, Minneapolis.
Dr. Edward G. Billings, Denver.
Dr. Perry C. Talkington, Dallas, Texas.
Dr. Lloyd J. Thompson, Winston-Salem, N. C.
Dr. William J. Bleckwenn, Madison, Wis.

PREVENTION

Dr. Manfred S. Guttmacher, chairman, Baltimore.
Dr. Franklin G. Ebaugh, Denver.
Dr. Alfred O. Ludwig, Boston.
Dr. Oscar B. Markey, Cleveland.
Dr. Paul L. Schroeder, Chicago.
Dr. Joseph S. Skobba, Atlanta, Ga.
Dr. John W. Appel, Philadelphia.

PERSONNEL POLICY

Dr. Frederick Hanson, chairman, Montreal.
Dr. Clarke H. Barnacle, Denver.
Mr. William H. Dunn, New York.
Dr. John M. Flumerfelt, Cleveland.
Dr. Lauren H. Smith, Philadelphia.
Dr. Ivan C. Berlien, Detroit.

SELECTION AND DISCHARGE

Dr. Wilford Bloomberg, chairman, Framingham, Mass.
Dr. Norman Q. Brill, Washington, D. C.
Dr. Roscoe W. Cavell, Detroit.
Dr. M. Ralph Kaufman, New York.
Dr. John M. Murray, Boston.
Dr. Donald F. Hastings, Minneapolis.

POTENTIAL EMERGENCIES

Dr. Calvin S. Drayer, chairman, Philadelphia.
Dr. Henry W. Brosin, Chicago.
Dr. William H. Everts, New York.
Dr. John H. Greist, Indianapolis.
Dr. Douglas A. Thom, Boston.

BRIGADIER GENERAL HILLMAN RETIRES

Brig. Gen. Charles C. Hillman, M. C., U. S. Army, has retired from active service as of January 31 and has been appointed director of the Jackson Memorial Hospital, Miami, Fla. Dr. Hillman is a graduate of Rush Medical College, 1911, and entered the service May 12, 1913. During the recent war he was director of professional services in the Surgeon General's Office and later commanding officer of Letterman General Hospital, San Francisco, for which service he was awarded the Legion of Merit with Oak Leaf Cluster.

ARMY AWARDS AND COMMENDATIONS

Colonel Thomas L. Ferenbaugh

The Legion of Merit was recently awarded to Col. Thomas L. Ferenbaugh, Columbus, Ohio. The citation read as follows: "Col. Thomas L. Ferenbaugh performed meritorious service from September 1942 to February 1945. As Medical Director, Camp Gordon, Johnston, Fla., he rapidly organized an efficient medical service during an emergency. As Post Surgeon and Commanding Officer, Station Hospital, Camp Forrest, Tennessee, he ably maintained this unit as a base hospital for the entire Tennessee Maneuver Area. Later he reorganized this Station Hospital into a Prisoner of War General Hospital, which functioned smoothly and efficiently, maintaining high professional standards. Colonel Ferenbaugh's leadership and untiring efforts established him as an exceptionally outstanding medical officer." Dr. Ferenbaugh graduated from Johns Hopkins University School of Medicine in 1909 and entered the service Sept. 20, 1909.

Major Benedict Nagler

The Army Commendation Ribbon has been awarded to Major Benedict Nagler, M. C., now with the Veterans Administration. The citation signed by Surg. Gen. Norman T. Kirk read, in part, "Your service with the Medical Department has been exceptional when compared with others of the same grade of similar positions, and I wish to commend you for your outstanding contribution as assistant chief and later as chief of the neuropsychiatric section, Cushing General Hospital, Framingham, Mass., from Oct. 27, 1943 to March 27, 1946." Dr. Nagler graduated from Hamburg University Medical School (Germany) in 1925 and entered the service from Newark, N. J.

Major John A. Layne

The Legion of Merit was recently awarded to Major John A. Layne, M. C., A. U. S., of Great Falls, Mont. The citation read as follows: "For meritorious services as Chief, Officers' Medical Section, Gardiner General Hospital from September 1944 to April 1946. Major Layne's efforts in organizing and conducting this important section of the hospital as demonstrated by his outstanding professional and administrative skill contributed greatly to the efficient operation of the installation. The services rendered by Major Layne won for him the respect and admiration of all patients and members of the staff with whom he came in contact." Dr. Layne graduated from the University of Minnesota Medical School, Minneapolis, in 1935 and entered the service Nov. 27, 1943.

Captain Alfred D. Heinemann

The Army Commendation Ribbon was recently awarded to Capt. Alfred D. Heinemann, M. C., A. U. S., of Dunkirk, N. Y.; "for outstanding and meritorious service in connection with military operations as medical officer, United States Forces, European Theater, Mission to the Netherlands," from Sept. 11, 1945 to July 1, 1946. After establishing his new office, said the citation, "without regard to his own health and welfare, he sacrificed every moment of his time to his patients. The care and precision with which he administered his broad knowledge of medical science averted serious consequences again and again. His devotion to duty; his sacrifices even above and beyond the call of duty, reflected great credit on himself and the military service." Dr. Heinemann, who graduated from the Universität Heidelberg Medizinische Fakultät, entered the service on May 6, 1944.

PUBLIC HEALTH SERVICE

ESTABLISH FEDERAL EMPLOYEES HEALTH DIVISION

For many years the U. S. Public Health Service has made studies of industrial and occupational hazards and has furnished professional advice on request to private industry and to agencies of the federal government. Now a federal employee health division has been created within the bureau of medical service of the Public Health Service which will develop standards and policies for federal employees health programs, provide private consultation services to the heads of departments and agencies of the federal government, including government owned and controlled corporations, review and appraise, on request, federal employee health programs already under way, and contract with departments and agencies of the federal government for the operation of such programs. Dr. John W. Cronin, a graduate of the University of Cincinnati College of Medicine and for many years an officer in the U. S. Public Health Service, will head the new Federal Employees Health Division.

EXAMINATION FOR APPOINTMENT OF PHARMACISTS

A competitive examination for appointment in the regular corps of the U. S. Public Health Service in grades of Junior Assistant, Assistant and Senior Assistant Pharmacists will be held during the period March 17 to April 16. Applicants, in addition to other things, must be citizens of the United States, have a diploma from a recognized pharmacy school, pass a physical examination performed by medical officers of the Public Health Service and have had a specified number of years of postgraduate professional training or experience. The entrance pay for these positions varies from $3,391 to $4,351 a year, depending on the appointment made and whether or not the person has dependents. Additional information may be obtained by writing the Surgeon General, U. S. Public Health Service, Washington 25, D. C.

PERSONAL

Dr. Howard C. Rufus, Lancaster, Pa., a reserve officer in the U. S. Public Health Service, has been called to active duty and assigned to the Office of Indian Affairs, Juneau, Alaska.

MEETING OF ADVISORY MENTAL HEALTH COUNCIL

The second meeting of the National Advisory Mental Health Council was held in Washington, D. C., January 22-24 to lay further plans for a comprehensive national mental health program which although authorized by the national mental health act, approved by Congress last summer, cannot be inaugurated until funds are appropriated. However, a considerable number of applications for grants for research and training have already been received, according to Dr. Robert Felix, chief, Mental Hygiene Division, U. S. Public Health Service. The council studied these applications as a basis for future action when funds are available.

The members of the National Advisory Mental Health Council are:

Dr. Edward A. Strecker, professor of psychiatry, University of Pennsylvania School of Medicine.
Dr. William C. Menninger, medical director, Menninger Clinic, Topeka, Kan.
Dr. John Romano, professor of psychiatry, University of Rochester Medical School, Rochester, N. Y.
Dr. Frank F. Tallman, commissioner of mental hygiene, Columbus, Ohio.
Dr. George S. Stevenson, medical director, National Committee for Mental Hygiene, New York.
Dr. David M. Levy, assistant professor, Department of Psychiatry, Columbia University College of Physicians and Surgeons, New York.

The members of the mental health study section, which acts in an advisory capacity to the council (The Journal, January 18, p. 187), are:

John Romano (chairman), Rochester, N. Y.
Nolan D. C. Lewis (vice chairman), New York.
Lawrence C. Kolb (executive secretary), U. S. Public Health Service.
Philip Bard, Baltimore.
Barney Brooks, Nashville, Tenn.
R. H. Felix, U. S. Public Health Service.
Eugene B. Ferris, Cincinnati.
Frank Fremont-Smith, New York.
Thomas M. French, Chicago.
Charles A. Janeway, Boston.
Kurt Lewin, Cambridge, Mass.
William Malamud, Worcester, Mass.
Margaret Mead, New York.
H. Houston Merritt, New York.
Arthur Mirsky, Cincinnati.
Lucille Petry, U. S. Public Health Service.
Marian C. Putnum, Boston.
David Rapaport, Topeka, Kan.
Fritz Redl, Detroit.
George Richard Wendt, Rochester, N. Y.
Abner Wolf, New York.
Harold G. Wolff, New York.
S. B. Wortis, New York.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Beckert, Charles F.	Gadsden
Collins, Henry C.	Montgomery
Thomas, Benjamin F. Jr.	Auburn

California

Archibald, Herbert C.	Pacific Palisades
Comarr, Avrom E.	Los Angeles
Gavce, Jerry W.	Fresno
Maggio, Guy E.	San Diego
Mandell, Joseph	San Gabriel
Nystrom, Sterling R.	Los Angeles
Parker, Harlen M.	Modesto
Reeder, Thomas P. Jr.	Newport Beach
Teall, Ralph C.	Sacramento

Connecticut

Flynn, Charles T. Jr.	Hamden
Malone, Robert F.	New Haven
Siege, Alfred G.	Stratford

Delaware

Adamson, William C.	Wilmington
Gaumer, Herman E.	Wilmington
Tobin, Thomas J.	Elsmere

District of Columbia

Byington, Samuel B.	Washington
Kelly, Edward A.	Washington
Leonard, Edward A.	Washington
Rose, Leonard B.	Washington
Schroeder, Leo P.	Washington
Taylor, Halley B. Jr.	Washington

Georgia

Howard, John C.	Savannah
Kelly, Alex R. Jr.	Augusta
Mabry, Robert H. Jr.	Macon
Morgan, Floyd W.	Augusta
Peeples, William J.	Athens
Rankin, Joseph L. Jr.	Atlanta
Smith, William E.	Manchester
Williams, Howard V. Jr.	Macon

Illinois

Anderson, Carl	Evanston
Beazell, James M.	Chicago
Browning, Carroll W.	Chicago
Connors, Edward K.	Chicago
Crowell, Marvin F.	Dwight
Dondanville, Joseph M.	Moline
Gage, Maxwell	Chicago
Karr, Walter J.	Chicago
Kazak, John J.	Aurora
Loewy, Arthur	Chicago
Maitino, Michael G.	New Windsor
Malmberg, Kenneth J.	Auburn
Mann, Arthur S.	Alton
Picken, Edgar R.	Rockford
Raymond, Frank K.	Chicago
Raynes, David J.	Chicago
Rose, William R.	Chicago
Teitelman, Stanley L.	Chicago
Thomas, Ralph A.	Hines

Indiana

Bechtold, Samuel E.	South Bend
Compton, George L.	Indianapolis
Kern, Carroll E.	Seymour
Mader, John H.	Hardinsburg

Iowa

Bauman, James G.	Waterloo
Graber, Harold E.	Fairfield
Keil, Philip G.	Iowa City
Lodwick, Gwilym S. Jr.	Mystic
Radcliffe, Glen J.	Boone

Kansas

Barry, Harvey L.	Columbus
Girod, Charles I.	Cambridge
Hill, Richard H.	Humboldt
Reed, Darwin C.	Wichita

Louisiana

Colvin, Paul V.	Shreveport
Moseley, Dayton L. Jr.	Ringgold
Oswalt, Guy C.	New Orleans
Pavy, Albert B.	Opelousas

Maryland

Beeuwkes, Henry	Berlin
Blank, Hymen R.	Baltimore
Cavanaugh, Leo M.	Tacoma Park
Jensen, Jacob R.	Sykesville
McGrath, William E. Jr.	Baltimore
Magness, Stephen L.	Catonsville
Ozazewski, John C.	Baltimore
Reinhard, John J. Jr.	Pikesville
Shackelford, Richard T.	Baltimore
Shuman, Louis H.	Scotland
Taylor, Floyd D.	Baltimore

Massachusetts

Ayers, John R. Jr.	Nahant
Benoit, Merrill P.	Southbridge
Berger, Milton M.	Waltham
Bidwell, Robinson L.	Boston
Blaney, Cyril C.	Westford
Dana, Jacob B.	Brighton
Di Cicco, John P.	Worcester
Gorday, Walter J.	Lowell
Karp, Lewis S.	Worcester
Kobrosky, Milton L.	Springfield
Scanlon, Joseph C.	Worcester

Michigan

Colvin, Walter G.	Grand Rapids
Keene, Clifford H.	Detroit
Maire, Edward D.	Detroit
Maire, Lewis E.	Dexter
Malley, Harry E.	Detroit
Thomas, Alfred E.	Detroit

Minnesota

Dixon, Chalmer D.	St. Charles
Hall, Arthur M.	Minneapolis
Hathaway, Stillman J.	Proctor
Klein, Daniel W.	Preston
Meyers, Ward C.	Rochester
Raszkowski, Harvey J.	Rochester
Rockwell, Curtiss V.	Minneapolis
Sborov, Victor M.	Minneapolis

Nebraska

Allely, James W.	Omaha
Bednarz, Walter J.	Omaha
Kelley, John W.	Omaha
Penner, Donald H.	Beatrice
Theirien, Robert C.	Lincoln
Youngman, Robert A.	Falls City

New Jersey

Gatti, Joseph D.	Hackensack
Keeney, James C.	Hoboken
McDonnell, Edmond J.	Paterson
Malis, Leonard I.	Ventnor
Mann, Seymour	Walden
Temes, Julius H.	Jersey City
Thomas, Leon H. S.	Paterson
Viscidi, Philip C.	Newark

New York

Appelman, Milton L.	Brooklyn
Ballard, Andre B.	New York
Cohen, Moses	Flushing
Comden, Nathaniel	Brooklyn
Epstein, Jacob I.	Brooklyn
Frank, Jerome D.	New York
Gause, Ralph W.	New York
Hanssmann, Irving J.	Freeport
Heins, Carl K.	New York
Huvelle, Camille H.	New York
Karouncs, Harry E.	Brooklyn
Kearney, Edward F. P.	Richmond Hill
Keckkeissen, Francis H.	New York
Keil, Francis C. Jr.	New York

New York—Continued

Madden, Arthur B.	Pawling
Manoil, Lazarus	Waverly
Markowitz, Irving	Brooklyn
Merz, Arthur E.	Bellerose
Musa, Agha B.	Farmingdale
Rasmussen, Loton H.	Huntington
Rauchwerger, Solomon M.	New York
Rosenthal, Julian E.	New York
Roszell, Leo H.	Hempstead
Sherry, Robert	Brooklyn
Spelman, George M.	Silver Bay
Taylor, Gurney	New York
Telfeyan, Sarkis A.	Forest Hills
Thier, Sidney	Brooklyn
Thomas, Alexander	New York
Thomas, Robert J.	Auburn
Turken, Alvin	New York
Vollmerhausen, Joseph W.	Brooklyn

North Carolina

Cheek, Kenneth M.	Durham
Glasgow, Douglas M.	Charlotte
Matthews, Hugh A.	Canton
Reece, John C.	Winston-Salem
Waldrop, Grayson S.	New Bern

Ohio

Davis, Christie E.	Youngstown
Federer, Harold W.	Columbus
Haeberle, Clarence I.	Cincinnati
Karam, James J.	Canton
Kates, Samuel R.	Cleveland Heights
Katz, Philip	Toledo
Kreischer, Joseph R.	Convoy
Magnuson, Robert H.	Bexley
Niesen, Edmond H. Jr.	Cincinnati
Patton, Stewart G. Jr.	Youngstown
Rappe, Chester B.	Cleveland
Stevers, Charles L.	Gallipolis
Suttles, Charles M.	Conneaut
Whiting, Lewis W.	Cleveland

Pennsylvania

Comess, William	York
Katsiff, Nathan	Philadelphia
Kehrli, Henry J.	Olyphant
Manley, John E.	Scranton
O'Hanlan, Joseph T.	Philadelphia
Ream, Norman B.	Glen Campbell
Regan, Maurice J.	Wilkes-Barre
Thomas, Nathanael R.	Scranton

Tennessee

Ellis, James W.	Nashville
McGuire, Horace M.	Memphis

Texas

Cohenour, Robert E.	Waco
Cole, Charles M.	Dallas
Isbell, Marney C.	Fort Worth
Kelley, Frank W.	Pampa
Magee, Jefferson D. Jr.	Abilene
Petty, Tom A.	Sherman
Smith, Harry S.	Witchita Falls
Theriot, Joseph R. Jr.	Houston

Washington

Carey, Joshua H.	Spokane
Kaveney, Irving E.	Port Angeles
Thomas, Leon B.	Tacoma

West Virginia

Mamick, Stephen	White Sulphur Springs
Peck, John D. Jr.	Summersville
Taylor, Harwood A.	Mullens

Wisconsin

Ademetz, John H.	Muscoda
Garbisch, Fred H.	Milwaukee
Olson, Carroll R.	S. Milwaukee
Regner, Mathias F.	Owen
Weinshel, Edward M.	Milwaukee

MEDICAL OFFICERS RELEASED BY THE NAVY

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

Alabama

Davis, Harwell G. II	Birmingham
Farmer, William M.	Samson
King, Robert T.	Mobile
Meadows, Henry H. Jr.	Montgomery
Milford, John J. Jr.	Huntsville
Millar, Edward A.	Woodstock

California

Bryan, John R.	San Francisco
Butler, Patrick G.	San Francisco
Corbett, Max B.	Los Angeles
Dayton, Gordon A.	San Francisco
Duge, John F.	Santa Monica
Gauder, Peter J.	San Francisco
Law, Charles R.	San Francisco
Libby, John E.	San Francisco
Matlock, Richard A.	Long Beach
Norman, Sylvester P.	San Francisco
Rixford, Henry C.	Sonora
Schaupp, John B.	San Francisco

Colorado

Cowgill, Joseph S.	Boulder
Davis, Edgar K.	Denver
Frank, Lorenz S.	Denver
Grant, William D.	Pueblo
Prockter, Walter H.	Denver
Stein, Melvin	Denver

Georgia

Colquitt, Hugh S.	Marietta
Cowart, Charles T.	Donalsonville
Davis, Charles L.	Macon
Gibson, Frank L. Jr.	Thomasville
Harrison, Frank N. H.	Augusta
Meaders, Henry DeW.	Tocco
Miller, John H.	Grovetown
Phillips, Curtis M. Jr.	Jessup
Rayle, Albert A. Jr.	Atlanta

Illinois

Fitzpatrick, William J. Jr.	Evanston
Grossman, Abraham	Chicago
Hall, James M.	Chicago
Hall, Marshall W.	Mt. Vernon
Kelly, Arthur L.	Chicago
Micaletti, Louis G.	Chicago
Podgorski, Chester T.	Chicago
Poniatowski, Jerome F.	Chicago
Shimkus, Alexander J.	Chicago

Iowa

Brown, George	Onawa
Graham, James W.	Sioux City
Hayworth, Albert B.	Sioux City
Johnson, Wendell A.	Iowa City
Pauly, James P. T.	Dubuque
Rendleman, William H.	Davenport
Richmond, Arthur C.	Fort Madison
Tice, William A.	Mason City

Kansas

Allen, Robert E.	Lawrence
Braitsch, Joseph R.	Wichita
Campbell, Milford B.	Salina
Jones, Harold H.	Winfield
McCoy, Charles P.	Wichita
Manahan, Gaylord E.	Wellington
Starr, Arthur G.	Concordia
Wallingford, Frederick C.	Cherryvale

Maryland

Finney, James McC.	Aberdeen
Garrison, Alfred S.	Monkton
Hanlin, Cyril R. F.	Baltimore
McShane, James R.	Baltimore
Miller, Royston	Towson
Morrow, Thomas L. Jr.	Bethesda
Nester. Hansford D.	Baltimore
Scott, Roger B.	Chevy Chase

Massachusetts

Avola, Frank A.	Medford
Balcanoff, Eugene J.	Worcester
Charif, Benson S.	Boston
Comninos, Cyrus	Groton
Crotty, Brendan F.	Jamaica Plains
Holmes, Joseph A.	Cambridge
Holt, Brantley Jr.	Cambridge
Lewis, Herbert D.	West Newton
Livingston, Kenneth E.	Brookline
McNeil, John J.	Everett
Nowicki, Theodore W. Jr.	Webster
Rubin, Maurice W.	Hyde Park
Smith, David S.	Ipswich

Michigan

Caumartin, Frederick E.	Detroit
Clary, Rudolph I.	Dowagiac
DeVries, Peter J.	Spring Lake
Hunsberger, Walter G.	Sault Ste. Marie
Jordon, Prescott Jr.	Royal Oak
Kehoe, Moylan B.	Flint
Mudge, Thomas J.	Negaunee
Oneal, William J.	Detroit
Peterson, Carl A.	Wayne
Rizzo, Paul	Detroit
Schroeder, Frederick A.	Clawson
Silas, Ralph M.	Ishpeming
Slattery, Francis G.	Mt. Morris
Wickowski, Albin J.	Detroit
Wollum, Arnold	Norway
Wood, Kenneth A.	Royal Oak

New York

Bridges, Thomas J. Jr.	New York
Bruyn, Henry B. Jr.	Hempstead, L. I.
Cassara, Sam	Rochester
Figliozzi, Alfred A.	Brooklyn
Gesualdo, Frank C.	Long Island
Granatelli, Alfred F.	Brooklyn
Hangarter, Theodore M.	Forest Hills
Harrington, Donald F.	Long Island
Koch, Henry J.	Dunkirk
Lukeman, Hermann J.	New York
McDermott, Edward J.	New York
Morey, Horace F.	Mohawk
Murphy, John P.	Lockport
Perlman, Abraham	New York
Powell, Matthew J. G.	Margaretville
Rosenberg, Charles A.	Binghamton
Scafa, Anthony T.	New York
Schmidt, Willard C.	Rochester
Titley, William B.	Amityville
Weidman, William	Brooklyn

North Carolina

Freeman, William H.	Warsaw
Hagaman, Len D.	Statesville
Hudson, Miles H.	Morganton
McGee, James E. Jr.	Roanoke Rapids
McPherson, Samuel D. Jr.	Durham
Miller, Lloyd D.	Raleigh
Murphy, Thomas L.	Salisbury
Pate, Archibald H.	Beaufort
Perry, Henry B. Jr.	Boone
Putzel, Charles L. Jr.	Salisbury
Williams, Ralph B. Jr.	Wilmington

Pennsylvania

Brobyn, Charles W.	Philadelphia
Clark, Richard S.	Burgettstown
Conner, Loran E.	Ellwood City
D'Auria, Thomas M.	Uniontown
Hughes, Paul W.	Scranton
Kozak, Walter H.	Vendergrift
Kraycirik, Emery T.	Windber
McClintock, Homer G.	Pittsburgh
Manning, John W. III	Philadelphia
Moore, Samuel R. Jr.	Germantown
Price, Charles E.	Norristown
Randall, Alexander IV	Philadelphia

South Dakota

Johnson, Clark F.	Watertown
Kilpatrick, William R. J.	Clear Lake
Matthiesen, Don E.	Huron

Texas

Clark, James W.	San Antonio
Dean, Earl F. Jr.	Waco
deMesquita, Paul J. B.	Orange
Hays, Jack R.	Brady
Hipps, Herbert E.	Marlin
Holloway, Charles K. Jr.	Houston
Hook, James H.	Fort Worth
McLean, William F.	Hereford
Nelson, Albert D. Jr.	Dallas
Payne, Glen B.	Lubbock
Pirkey, Will P.	New Boston
Plageman, William H.	Shiner
Renfert, Henry Jr.	Galveston
Weisiger, Ross W.	Houston

Virginia

Baggs, Wilbur J. Jr.	Norfolk
Delaney, William M.	Alexandria
Gouldin, John M. III	Tappahannock
Hellems, Harper K.	Norfolk
Holt, Robert G.	Richmond
Iden, Thomas C.	Berryville
Johnson, Walter S.	Roanoke
Jones, Joseph F. Jr.	Richmond
Keeley, Robert L. A.	Roanoke
Kellam, Eusebius	Cape Charles
Kern, Douglas O.	Charlottesville
Martin, James C.	Penhook
Morrison, Robert H.	Petersburg
Moss, John L.	Hilton Village
Taylor, Gervas S. Jr.	Richmond
Tompkins, Souther F.	Lexington
Wine, Jean F.	Harrisonburg

Washington

Green, John R.	Tacoma
Ham, Lyle C.	Vancouver
Lucas, Donald B.	Clarkston
McCrea, Harold J. Jr.	Everett
McDougall, William J.	Seattle
Mackay, Hunter J.	Seattle
Miller, Stuart C.	Walla Walla
Nash, Edward W.	Seattle
Palmason, Edward P.	Seattle
Patterson, Paul R.	Seattle
Reynolds, Robert A.	Chehalis

Wisconsin

Furlong, Joseph J.	Wauwatosa
Gay, Leonard A.	Madison
Halbert, John G.	Madison
Jensen, Frederick G.	Menasha
Larme, Francis P.	Belleville
Merten, Alfred N.	Milwaukee
Moore, William J.	Madison
Neller, James L.	Madison
Pelton, Russell S.	Waupaca
Pierson, Paul S.	Milwaukee
Schwahn, Richard W.	Stevens Point
Slomowitz, Jonathan	Milwaukee

Hawaii

Felix, John M.	Honolulu
Goodhue, William W.	Honolulu
Lum, Edward C. W.	Honolulu
Sexton, Harold M.	Hilo
Trexler, Clarence W.	Honolulu
Withington, P.	Honolulu
Wong, Francis F. C.	Honolulu

Alaska

Swanson, Frederick	Valdez

Canada

Lehmann, Arnold L.	Edmonton
Long, Avard C.	Ontario, Canada

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ALABAMA

State Health Director Resigns.—Dr. Burton F. Austin, after twenty-six years of public health work in Alabama and serving as head of the state health department since 1942, has resigned to take up new duties as southeastern regional medical director for the American Red Cross with headquarters in Atlanta, Ga. Dr. Austin is a graduate of the University of Atlanta School of Medicine, University, 1917. He will be succeeded by Dr. Daniel G. Gill, Montgomery County health officer.

Grants to University.—The Medical College of Alabama at Birmingham has received a gift of $3,000 from Henry P. Johnston and the Birmingham *News-Age-Herald,* to be used for a study of deafness.——A gift of $2,500 from Judge Luther B. Liles, Anniston, to the Medical College of Alabama, Birmingham, for research work in blood diseases was announced last month by Dr. Roy R. Kracke, dean of the medical college. It is to be known as the Luther B. Liles Fund and will aid greatly in work now beginning in leukemia and other diseases of that nature, Dr. Kracke said.

CALIFORNIA

Stafford Warren Appointed Dean of Medical School.—Dr. Stafford L. Warren, professor of radiology at the University of Rochester School of Medicine and Dentistry, Rochester, N. Y., and during the war chief of the medical division for the entire atomic bomb project under the Manhattan District, has been appointed dean and professor of biophysics of the new medical school at the Los Angeles campus of the University of California. Dr. Warren received his medical degree from the University of California Medical School, San Francisco, in 1922 and thereafter served as assistant in pathology at Johns Hopkins University School of Medicine, Baltimore, as medical intern at the Massachusetts General Hospital and as resident physician in Collis P. Huntington Memorial Hospital, Boston. He has been a member of the University of Rochester School of Medicine and Dentistry faculty for twenty-one years. He will supervise plans for the medical buildings and university hospital of 500 beds to be built on the Los Angeles campus and assemble the faculty and staff for the new institution. He was a key figure at the first atomic bomb test in New Mexico and later was sent on missions to Nagasaki and Hiroshima to study the effects of the bombs dropped on Japan.

California Cancer Program.—Recently the cancer commission of the California Medical Association and the American Cancer Society, California division, jointly launched a program which included intensive public education in cancer and the establishment of more tumor centers. The cancer commission has formulated a plan to assist and encourage the organization of tumor consultation clinics in approved private hospitals throughout California. Tumor consultation centers, optional with the staffs of each hospital, will be subject to only the minimum standards for such clinics. Only a person referred by a private physician will be accepted, and the patient will be returned to him with recommendations. The American Cancer Society is financing a central office in each county as headquarters for a nurse, secretary and social service worker, who will be responsible for all records, program announcements and follow-ups on patients. A cancer information bureau will be established in the same office, which will give to patients the names of physicians who have indicated an interest in receiving referred cancer cases. Funds for needy patients allocated on a county basis will be available to approved private hospitals on application by the private physician from the campaign resources of the American Cancer Society. Several tumor consultation centers and detection centers are already in operation throughout California. It is hoped that many more can be organized soon to assist in the diagnosis and care of 39,000 patients now living with cancer in California.

COLORADO

State Health Director Appointed.—Dr. Roy L. Cleere, Denver, has been appointed by the state Civil Service Commission as state health director. Dr. Cleere, who is a graduate of the University of Texas, Medical Branch, Galveston, has been secretary of the Colorado State Board of Health and executive officer of the Colorado State Division of Public Health.

CONNECTICUT

Support Establishment of Health Districts.—The Connecticut State Medical Society has declared its intention of supporting a proposal of the state health department for the establishment of full time health districts throughout the state. Dr. Howard S. Colwell, New Haven, chairman of the society's public health committee, says that the endorsement of the health district system by the state medical society is an effort to assist in the development of modern public health services for the smaller towns and rural communities.

ILLINOIS

Violent Deaths in Cook County.—The annual report of the coroner of Cook County for 1946 shows a total of 674 deaths due to automobile accidents, 94 due to street car accidents, railroads 81, elevated railway 22, industrial accidents 115, motorcycle 8, bicycles 7, airplane 14. Falls accounted for 637 deaths, of which 148 were on the street, 273 on the floor and 44 from buildings. There were 310 homicides, of which 184 were due to shooting, and 431 suicides, the most common methods having been hanging in 165 cases and shooting in 110. The overall report has been said to show an increase in violent deaths of about 9.5 per cent. Cook County is occupied largely by the city of Chicago, which in 1940 had a population of 3,396,808.

Chicago

Society News.—The Chicago Medical Society, February 19, will be addressed by Dr. Arthur W. Allen of the Massachusetts General Hospital and Harvard Medical School, Boston, on "The Prevention and Treatment of Thrombosis in the Deep Veins of the Legs and Pulmonary Embolism," and by Dr. Waltman Walters, Mayo Clinic, Rochester, Minn., on "Vagotomy for Peptic Ulcer."

Food Poisoning Following Christmas Party.—Eighty employees of the Container Corporation of America are said to have been made ill as a result of eating turkey dressing served at a Christmas party. None of the victims were hospitalized. The president of the Board of Health of Chicago, Dr. Herman N. Bundesen, is reported to have said that the roast turkey and dressing had been prepared in advance and left standing twenty-four hours without refrigeration.

Hematology Research Foundation.—This organization, comprising a group of 1,250 civic minded young women, raises funds for research on blood diseases and related problems. All funds are allocated by the foundation's medical advisory council, whose members are Drs. Anton J. Carlson, Ludvig Hektoen, Andrew C. Ivy, Italo F. Volini, Raphael Isaacs, Louis R. Limarzi and Otto Saphir. The foundation has announced that the Ruth Reeder Fellowship has been awarded to Dr. Samuel S. Leiter, a graduate of the University of Pennsylvania School of Medicine and recently released from the navy after three and one-half years in submarine service. The Annette and Philip M. Marcus Fellowship has been awarded to Dr. B. Elizabeth Armstrong, a graduate of the University of Illinois Medical School now serving with the hematology laboratories of the Michael Reese and Cook County hospitals.

INDIANA

Annual Registration of Practitioners.—The house of delegates of the Indiana State Medical Association has gone on record as favoring through legislative action an annual registration of all practitioners of the healing arts. With a registration fee of two dollars it would be possible for the medical board to employ a full time investigator to obtain the necessary evidence for prosecution of violations of the law.

State Medical Officers.—Dr. Floyd T. Romberger, Lafayette, assumed the duties of president of the Indiana State Medical Association last month, succeeding Dr. Jesse E. Ferrell, Fortville. Dr. Cleon A. Nafe, Indianapolis, is president-elect, and Dr. Arthur F. Weyerbacher, Indianapolis, is association treasurer. Dr. Romberger, an anesthetist, was a member of the house of delegates of the state association and for fifteen years served as councilor, five of them as chairman.

Supreme Court Upholds Revocation of License.—The Indiana Supreme Court, Indianapolis, on January 4 is said to have upheld a ruling of the State Board of Medical Registration revoking the license of Dr. Addison G. Moore of Vincennes. The Supreme Court reversed a ruling of the Knox Circuit Court, which had previously overruled the action of the state board. Dr. Moore was convicted in November 1944 (THE JOURNAL, Sept. 8, 1945, p. 143) for violation of the federal narcotic laws.

MASSACHUSETTS

Seymour Gray Joins Harvard Staff.—Dr. Seymour J. Gray, formerly assistant professor of medicine at the University of Chicago, has been appointed assistant professor of medicine at Harvard Medical School and senior associate of medicine at the Peter Bent Brigham Hospital in Boston. Dr. Gray will divide his time between his duties as director of the gastrointestinal clinic at the hospital and as a member of the medical school group concerned with research in the biophysical laboratory. He recently returned from service at the Naval Medical Center, Bethesda, Md., as a lieutenant commander in the Naval Reserve.

Boston City Hospital Lectures.—Members of the medical profession are invited to attend the Tuesday evening lectures of the House Officers' Association of the Boston City Hospital held in Cheever Amphitheater of the Dowling Building at 7 p. m. Programs for February are as follows:

February 18. Dr. Alvan L. Barach, associate professor of clinical medicine, Columbia University College of Physicians and Surgeons, New York City, "Physiologic Therapy in Pulmonary Disease." Discussion: Dr. Maurice S. Segal, assistant professor of medicine, Tufts Medical School, Staff of Boston City Hospital.

February 25. Dr. Cornelius P. Rhoads, director, Memorial Hospital for the Treatment of Cancer and Allied Diseases, New York City, "The Metabolic Aspects of Cancer."

MICHIGAN

Michigan Allergy Society.—"Pediatric Allergy" was the subject of an address by Dr. Bret Ratner, clinical professor of pediatrics, New York University College of Medicine, New York, when he addressed a joint meeting of the Detroit Pediatric Society, Detroit Dermatological Society and Detroit Otolaryngological Society January 17.

Mott Foundation Grant for Graduate Study.—The Mott Foundation has made a grant of $2,400 for the graduate study program of pediatrics and communicable diseases at the University of Michigan, Ann Arbor, to be used by a physician who will go to the Flint School Health Program after two years' study. The Mott Foundation, which was established several years ago by Mr. Charles S. Mott, Flint, vice president, General Motors Corporation, sponsors various educational projects and outdoor activities.

State Officers Night Meeting.—Genessee County Medical Society held a State Officers Night meeting in Flint January 14, Dr. Rolland C. Pochert, Owosso, councilor for the Sixth District, presiding. Dr. William Hyland, Grand Rapids, president of the Michigan State Medical Society, opened the program with a discussion of present problems of the medical profession. State Secretary Dr. L. Fernald Foster, Lansing, told of the Hill-Burton Hospital Construction bill, and William Burns, state executive secretary, discussed three impending bills in Congress as well as anticipated bills in the Michigan legislature. Various phases of the public relations program were explained by Hugh Brenneman, public relations council for the state society. Dr. Carleton Dean, East Lansing, of the Crippled Children's Commission spoke briefly on the status of the rheumatic fever program.

First Michigan Postgraduate Clinical Conference.—The first annual Michigan Postgraduate Clinical Conference is scheduled for the Book-Cadillac Hotel, Detroit, March 12-14. It has been instituted by the Michigan State Medical Society with the cooperation of the medical schools of the University of Michigan and of Wayne University and with the endorsement of the Wayne County Medical Society and the Michigan Foundation for Medical and Health Education. Registration and exhibits will open at 8:30 a. m. and conference programs begin at 9 o'clock each day. The opening speaker for Wednesday's session is Dr. Max R. Burnell, Flint, whose subject is "Gynecological and Obstetrical Problems in Industrial Medicine and Surgery." Throughout the day a variety of subjects will be discussed, each speaker being given twenty minutes. Exhibits will be in the Italian Garden, fourth floor. Clinical pathologic conferences—Wednesday a medical case, Thursday a surgical case—will be conducted from 4:20 to 5 p. m. The Wednesday evening session from 8 to 10 will be a symposium on "Protection against Infectious Disease," with Drs. Grover C. Penberthy, Hardy A. Kemp and Joseph A. Johnston, Detroit, and Thomas Francis, Ann Arbor, participating. Wednesday's evening session will be a panel discussion on "Preoperative and Postoperative Care of the Surgical Patient." Dr. Frederick A. Coller, Ann Arbor, will act as moderator on the panel made up of Drs. Luther C. Carpenter, Grand Rapids; Russell L. Mustard, Battle Creek, and Daniel J. Leithauser, Detroit. There is no Friday evening session. Half hour luncheon sessions are scheduled to begin at 1:15 following a lunch period. Members of the Michigan State Medical Society and all neighboring states and provinces are invited to attend this conference. Further information may be obtained by writing Dr. Grover C. Penberthy, chairman, 2020 Olds Tower, Lansing 8.

Personal. — Dr. William C. Ellet, Benton Harbor, was recently appointed to the state board of registration in medicine, replacing Dr. Francis J. O'Donnell, Alpena, resigned. Dr. Ellet was a board member before he went on active duty with the navy in 1941.——Dr. Frederick C. Kidner, for many years professor of clinical orthopedic surgery, Wayne University College of Medicine, Detroit, was appointed emeritus professor in the same department, December 26. The Detroit Board of Education cited Dr. Kidner for his "outstanding service and professional contributions to the college."——Dr. Oscar W. McKenna, Flint, has been elected to emeritus membership in the Michigan State Medical Society.

MISSOURI

Research on Edema.—An award of $17,110 by the Medical Sciences Branch of the Office of Naval Research was given to Washington University, St. Louis, recently for research on edema. The research work will be under the direction of Dr. Palmer H. Futcher, assistant professor of medicine.

Regional Scholarships.—Washington University School of Medicine, St. Louis, has established a program of regional scholarships to include at least seven annual awards to incoming freshmen and transferring students. The scholarships, under the Jackson Johnson Scholarship Fund, will be awarded to candidates of exceptional ability who have resided for at least three years in one of seven regions in the United States and who have completed their premedical training or their first two years of medical training in that region. At least one scholarship will be awarded in each region. Stipends will vary according to the financial need of the student, the maximum being $1,200 a year. Awards are renewable for the succeeding years of the medical course at the medical school if the student's record justifies renewal. Three graduate fellowships will also be awarded each year for five years under the Jackson Johnson fund. Applicants must be graduates of a recognized school of medicine and acceptable for admission to the School of Graduate Studies of Washington University as candidates for a doctorate degree. All applications must be completed by March 1 for the period beginning the following September.

NEW YORK

Bert Rickards Retires.—After many years' service in the state department of health, Mr. Bert R. Rickards, director, division of public health education since 1922, retired December 31. Through his initiative the department of health in New York was one of the first to inaugurate a program of home and farm safety, according to *Health News*.

Pratt Gift to Hospital Building Fund.—Mrs. Harold I. Pratt has given $144,900 to the building fund of the North Country Community Hospital, Glen Cove, Long Island, as a memorial to her late husband, first president of the hospital. The gift will be used to build a 23 room section in a proposed new building for the hospital. The $1,750,000 building fund will be launched next spring.

Tompkins County Postgraduate Lecture.—Included in postgraduate instruction arranged by its Council Committee on Public Health and Education, the Medical Society of the State of New York has arranged a lecture for the Tompkins County Medical Society, Monday, February 17, 8:30 p. m., at Tompkins County Memorial Hospital, Ithaca. Dr. Nelson G. Russell, professor of medicine emeritus, University of Buffalo School of Medicine, will speak on "Rheumatic Fever—Rheumatic Heart Disease."

Society News.—The Medical Society of the County of Albany held a scientific session January 22 at which Dr. Konrad Birkhaug, associate medical bacteriologist, New York State Division of Laboratories, discussed "Twenty Years of Experimental and Clinical BCG Vaccination in Scandinavia."——The Maternity Center Association invited Dr. Grantley Dick Read of London, England, to address it at the New York Academy of Medicine January 17 and to present his concepts of natural childbirth without pain.

Social Workers Institute.—The psychiatric social workers institute at Buffalo State Hospital January 25 was sponsored by the department of mental hygiene to provide training to improve the social service to patients in state institutions and give the social workers greater skill in handling their responsibilities in the community. Technics of the first interview with a mental patient were discussed. Other institutes have been scheduled, including one at the Psychiatric Institute, New York City, February 14, and another at Syracuse Psychiatric Hospital, February 21.

Health in an Aging Population.—A Conference on Health in an Aging Population will be held at the Rochester Academy of Medicine, March 13. It is sponsored by the Council of Social Agencies and with the participation of the School of Medicine and Dentistry of the University of Rochester, Medical Society of the County of Monroe, Rochester Academy of Medicine, Tuberculosis and Health Association of Rochester and Monroe County, Board of Education of Rochester and other agencies. There will be morning and afternoon sessions and a public evening meeting, with Louis Dublin of the Metropolitan Life Insurance Company as speaker.

Clinical Session on Pulmonary Tuberculosis.—A clinical session on chronic pulmonary diseases will be held Wednesday evening, February 19, at Cornell University Medical College amphitheater, New York City, at 8:15. "The Minimal Lesion in Pulmonary Tuberculosis" is the subject for Drs. Isidore D. Bobrowitz, Municipal Sanatorium, Otisville; Herman E. Hilleboe, U. S. Public Health Service, Washington, D. C., and William H. Roper, Fitzsimons General Hospital, Denver. Drs. J. Burns Amberson, Bellevue Hospital, New York City, and Haynes H. Fellows, Metropolitan Life Insurance Company, New York City, are scheduled for discussion to follow.

Western New York Counties Unite.—The closely integrated operation of the eight county medical societies in the Eighth Judicial District of New York was assured December 12 by the formation of the Advisory Council of Presidents and Secretaries of the Medical Societies of the Eighth Judicial District. Advocated by Dr. Porter A. Steele, president of the Medical Society of the County of Erie, the council was established to safeguard medicine's interests, the advancement of the profession and promotion of public welfare and health. The new relationship of these county societies will make possible the constant interchange of information and knowledge of equal interest to each county. Other judicial district branches in the state are expected to follow the Eighth District's example.

New York City

Health Education Conference.—The seventh annual health education conference of the New York Academy of Medicine January 21 took up the problems in health education, its myths and resistances and positive motivations. The afternoon session was a panel meeting with full audience participation to review and discuss materials presented during the morning session.

The Rothschild Lecture.—The ninth Marcus A. Rothschild Lecture will be delivered February 13 by Dr. Bernard Zondek, professor of gynecology and obstetrics, Rothschild Hadassah University Hospital, and director of hormone research, Hebrew University, Jerusalem, Palestine, on the "Mechanism of Action and Inactivation of the Estrogenic Hormone" in the auditorium of Beth Israel Hospital.

Laboratory Speeds up Blood Testing.—At a dinner meeting of the Society of Bacteriologists Dr. Israel Weinstein, health commissioner, reported that reorganization of the serological laboratory had made it possible to complete more than 5,000 blood tests a day as compared to 2,160, the previous high. This speed up of blood tests is expected to aid the fight against venereal disease. About 750,000 blood specimens were tested last year, he said.

Another Geriatric Research Laboratory.—It was recently stated that the city's first research laboratory devoted wholly to the study of geriatrics opened January 1 at the Brooklyn Hebrew Home and Hospital for Aged. The Home and Hospital of the Daughters of Jacob in this city now points out that it established such a research laboratory many years ago, the efforts of which have been directed exclusively to the field of geriatrics; also that the research has been so intensive that it has been necessary on two occasions to enlarge the facilities.

Construction Begins on Cancer Hospital.—Ground breaking ceremonies for the 300 bed James Ewing Memorial Hospital, 1st Avenue from 67th to 68th streets, Manhattan, a part of the Memorial Cancer Center, were held January 24. The city's new cancer hospital, which will cost $3,195,000 and will be completed in 1948, will be constructed of red brick to match the existing Memorial Hospital and the Sloan-Kettering Institute for Cancer Research now under construction. Dietary service has been decentralized so that each kitchen will serve two floors. Memorial Hospital made the land available for the city's new institution (The Journal, Dec. 21, 1946, p. 1020), and the medical and professional staff will be appointed on nomination by Memorial Hospital. The city will maintain and operate the hospital, and its purpose will be the care and treatment of long term cancer patients and research.

NORTH CAROLINA

Duke University News.—Dr. Eugene A. Stead, formerly of Atlanta, Ga., assumed his duties as professor of medicine at Duke University School of Medicine, filling the professorship held by Dr. Frederick M. Hanes, who died last March. Dr. Stead was formerly a professor at Emory University School of Medicine, Atlanta, and physician in chief, University division, Grady Hospital.——Dr. Raymond S. Crispell left Duke University November 4 to become director of the division of neuropsychiatry for Branch No. 5 of the Veterans Administration with headquarters in Atlanta. In addition he will be connected with the Emory University School of Medicine and the Georgia School of Technology, Atlanta.

OKLAHOMA

Personal.—Mr. Homer G. Goltry, superintendent of Enid General Hospital, Enid, has been chosen president of the Oklahoma Hospital Association.

Oklahoma Medical Research Foundation.—With interest in obtaining funds to carry on medical research in Oklahoma, the Oklahoma Medical Research Foundation has been chartered and is conducting a public education program throughout the major centers of the state. From offices at 208 Braniff Building, Oklahoma City, an organized fund raising movement with a $1,500,000 minimum goal will be initiated this spring, preceded by local meetings designed to focus the attention of the public on the need for and benefits from scientific research in medicine. Interest and enthusiasm of business and professional men outside the field of medicine have been noted.

PENNSYLVANIA

Society News.—Some recent developments regarding enucleation, modern implants and prosthesis with particular reference to the Cutler and Reudemann technics was the topic of discussion by Dr. Benjamin F. Souders, Reading, at the January meeting of the Reading Eye, Ear, Nose and Throat Society.

Philadelphia

Alfred La Boccetta Appointed Hospital Chief.—Dr. Alfred C. La Boccetta, recently appointed superintendent and medical director of the Philadelphia Hospital for Contagious Diseases, was honored at a testimonial dinner attended by more than a thousand guests January 20. The 34 year old physician is a graduate of Temple University Medical School, 1938, was a lecturer in pediatrics at the Temple University Medical School and has worked with Dr. Pascal L. Lucchesi, recently appointed head of the Philadelphia General Hospital, whom he succeeds.

Pittsburgh

Personal.—The Pittsburgh section of the American Chemical Society has chosen William Parks Yant, D.Sc., director of research, Mine Safety Appliances Company, for the 1946 Pittsburgh Award, which is bestowed annually for outstanding service to chemistry. Dean Herbert E. Longenecker, Ph.D., of the Graduate School, University of Pittsburgh, said that every activity of Mr. Yant has directly benefited humanity by improving health, reducing suffering and raising the general economic level. Many years ago Mr. Yant was chief chemist of the health division of the U. S. Bureau of Mines.

SOUTH CAROLINA

South Carolina Obstetrical and Gynecological Society.—During the 1946 postgraduate seminar of the Medical College of South Carolina early in December the South Carolina Obstetrical and Gynecological Society was organized with Drs. Lester A. Wilson, Charleston, president, Manly E. Hutchinson, Columbia, vice president, and Joseph Dechard Guess, Greenville, secretary-treasurer.

TENNESSEE

Flexner Lectures.—Sir Edward Mellanby, London, England, will be in residence as Flexner Lecturer for 1947 at Vanderbilt University School of Medicine, Nashville, during the two months' period of March and April. The five formal lectures of the series will be on the general subject "The Experimental Method in Problems of Nutrition."

Law Authorizing Practice of Naturopathy Repealed.—On January 16 the state legislature in both the house of representatives and the senate passed on third and final reading an act repealing the law approved in 1943 and amended in 1945 authorizing the practice of "Naturopathy" and creating an examining board. On January 17 Governor Jim McCord signed the act, and S. B. 15 became law. During the short period of time that this statute was on the books the Naturopathic Examining Board issued licenses to more than 900 "Naturopaths." All except about 185 of these "Naturopaths" live outside the jurisdiction of Tennessee and are practicing in other states. The 1947 act cancels all licenses issued in Tennessee.

TEXAS

University News.—A grant of $5,000 has been awarded to Southwestern Medical Foundation by the First Texas Chemical Manufacturing Company, Dallas, to carry on research in the department of pharmacology. The foundation also received from the Texas Division of the American Cancer Society three grants amounting to $17,500 for the study and treatment of cancer with radioactive substances. Grants totaling $11,915 have also been received for research work in the department of bacteriology and immunology at Southwestern Medical College, Dallas. The National Foundation for Infantile Paralysis gave $9,575, to be used in investigations on the influence of anesthesia on the course and outcome of experimental neurotropic virus infections, to be carried out by Dr. S. Edward Sulkin, chairman of the department. A grant of $2,340 from the U. S. Public Health Service has been made for research work concerning clinical and therapeutic action of penicillin and streptomycin.

VIRGINIA

Memorial Hospital Graduate Course.—The twentieth Annual Spring Graduate Course in Ophthalmology, Otology, Rhinology, Laryngology, Faciomaxillary Surgery, Bronchoscopy and Esophagoscopy has been announced for April 7-12 at the Patrick Henry Hotel, Roanoke, under the auspices of the Gill Memorial Eye, Ear and Throat Hospital. The lectures and demonstrations will be presented by men of high academic standing along with practical background and clinical practice.

WEST VIRGINIA

Cancer Essay Contest.—The West Virginia Cancer Society, Inc., is sponsoring an essay contest, open to students enrolled at West Virginia University or at any college in West Virginia. The subject is "The Cancer Problem," and discussion is limited to the best way to educate the people of West Virginia in matters pertaining to cancer control. The contest closes March 31, and entries are to be sent to the West Virginia Cancer Society, Inc., 1101 West Virginia Building, Huntington 1, W. Va.

Committees on Mental Hygiene and Diabetes.—Two special committees, authorized by the Council of the West Virginia State Medical Association, have been appointed by Dr. Wade H. St. Clair, president of the association, one on mental hygiene and the other on the study of diabetes in West Virginia. The committee on mental hygiene will contact the state health department and the mental institutions in the state and will study proposals for improvements, including increase in appropriations and appointment of additional trained personnel. It will keep in close contact with the National Committee for Mental Hygiene and affiliated organizations and will consider the creation of local mental hygiene groups. The council took action following the adoption of a resolution by the American Medical Association at the meeting at San Francisco last July. This resolution contemplates the development, with the help of each state medical association, "of an adequate statewide mental hygiene and mental diseases program" and cooperation "with other groups in stimulating public support in order that sufficient funds may be secured for the proper operation and maintenance of such activities." Under the provisions of the national mental health act, approved by President Truman last summer, $10,000,000 is appropriated for research throughout the country relating to psychiatric disorders and the development of more effective methods of prevention, diagnosis and treatment of such disorders. The fund will be distributed by the U. S. Public Health Service through grants-in-aid and otherwise. The members of the new committee are Drs. Oscar B. Biern, Huntington, chairman, and Albert L. Wanner, Wheeling; Joseph L. Knapp, Weston; Edward F. Reaser and George D. Johnson, Huntington, and Alfred A. Wilson, Oscar N. Morison, William B. Rossman and Newman H. Ryer, Charleston. Dr. Biern has been serving as chairman of the special psychiatric committee appointed several months ago, under the sponsorship of which psychiatric seminars were held in various cities of West Virginia. Dr. William M. Sheppe, Wheeling, is chairman of the new committee on the study and investigation of statistics concerning diabetes in West Virginia. The other members are Drs. Fred R. Whittlesey, Morgantown; William A. Thornhill, Charleston; Richard C. Neale, Bluefield, and L. Rush Lambert, Fairmont. The appointment of this committee will mean a closer relationship between the state medical association and the dietetic associations in the state.

WISCONSIN

Personal.—Mr. Robert O. McLean, Madison, assistant editor of the *Wisconsin Medical Journal*, has been appointed executive director of the Wisconsin division of the American Cancer Society.——Dr. and Mrs. George H. Williamson observed their fiftieth wedding anniversary in Neenah September 3.——Dr. Malcolm P. Andrews, Manitowoc, has accepted an appointment as resident physician at the Florida State College for Women, Tallahassee.——Dr. Robert C. Wolf, Hales Corners, has resigned, effective September 1, as health officer of the town of Greenfield, a post he held for ten years.——Dr. Drexel L. Dawson, Eau Claire, has been appointed chief medical officer of the Eau Claire district of the Veterans Administration. Dr. Dawson was a lieutenant colonel in the Medical Corps at the time of his separation from the service in 1946.

GENERAL

Orthopsychiatric Association.—Members of the American Orthopsychiatric Association, Inc., will meet in Cincinnati February 17-19 for the twenty-fourth annual meeting. The opening session will feature a symposium, "The Scientist in Society," with Rabbi Joshua Liebman presiding. For further information address Elizabeth Charleton, executive assistant, Room 916, 1790 Broadway, New York 19.

Free Blood Banks.—A blood bank service similar to the one that saved so many on the battle fields is now planned for peacetime activities of the American Red Cross. Blood banks are set up only on the request and in cooperation with established medical and health agencies. The Red Cross requires that hospitals and physicians make no charge to patients for blood given without charge by the volunteers.

Mid-Western Radiologists.—The Cleveland Radiological Society is sponsoring the seventh annual clinical conference of the Mid-Western Radiologists, which will be held in Cleveland February 14-15 at the Statler Hotel after a lapse of four years. Dr. Harry Hauser, Cleveland, is general chairman. Emphasis will be placed on the clinical aspects of problems of interest to radiologists, presented by leading men in the Cleveland area.

Gibbs Memorial Prize.—The New York Academy of Medicine, 2 East 103d Street, New York 29, has announced that $1,500 is available during 1947 under the Edward N. Gibbs Memorial Prize for original research in diseases of the kidney. Candidates must be physicians who have been graduated at least three years, be residents of the United States and submit evidence of research already performed and of facilities to prosecute research on the causation, pathology and new methods of treatment of diseases of the kidney. Applications with the required evidence should be addressed to the Gibbs Prize Committee at the New York Academy of Medicine prior to March 31.

Louis Livingston Seaman Fund.—The New York Academy of Medicine announces the availability of the Louis Livingston Seaman Fund for the furtherance of research in bacteriology and sanitary science. Two thousand five hundred dollars is available for assignment in 1947. This fund has been made possible by the terms of the will of the late Dr. Louis Livingston Seaman and is administered by a committee of the academy under the following conditions and regulations: 1. The committee will receive applications either from institutions or from individuals up to March 1, 1947. Communications should be addressed to Dr. Wilson G. Smillie, Chairman, Louis Livingston Seaman Fund, 1300 York Avenue, New York 21. 2. The fund will be expended only in grants in aid for investigation or scholarships for research in bacteriology or sanitary science. The expenditure may be made for securing technical help, aid in publishing original work or purchase of necessary books or apparatus.

Liquor Offenses and Driving While Intoxicated.—The official reports of the Federal Bureau of Investigation show, it is reported, that 1,228,150 arrests for liquor offenses were made in the year 1945 in 1,422 cities, a rate of 2,613.1 per hundred thousand of population in those cities. The number of arrests for liquor offenses in the year 1932 in 595 cities was 373,924, a rate of 1,726.3 per hundred thousand of population. The ratio of persons charged with driving while intoxicated in 1934 was 76.5 per hundred thousand in the total population of 793 cities, and in 1945 the ratio was 95.4 per hundred thousand of population in 1,422 cities having a total population of more than 47,000,000.

American Association for Advancement of Science Awards.—The 1946 $1,000 award of the American Association for the Advancement of Science has been divided, $500 going to Quentin M. Geiman, Ph.D., parasitologist, and Ralph W. McKee, Ph.D., biochemist, of the department of biological chemistry, Harvard Medical School, for their paper "Cultural Studies on the Nutrition of Malarial Parasites" and $500 to Tracy M. Sonneborn, Ph.D., professor of zoology, Indiana University, Bloomington, and co-workers of his department, Winifred Jacobson and Ruth B. Dipple, for their work on Paramecium aurelia, which was a study on the nature of the gene and its mechanism of action.

Unpublished German Medical Research.—Following six months' assignment in occupied Germany for the purpose of gathering manuscripts of medical and related research unpublished because of the war and postwar conditions, Dr. Hans Lowenback has resumed his work at Duke University Hospital, Durham, N. C., as associate professor of neuropsychiatry and physiology. While in Germany Dr. Lowenbach visited, under sponsorship of the Field Intelligence Agency Technical, schools in zones under United States, British and French occupation and in Berlin. More than 25,000 pages of original manuscripts were collected and microfilmed. Most of the papers contained research hitherto held secret under German wartime restrictions. This material is now on its way to this country to be catalogued and abstracted and will be immediately available to the public through the office of the Publications Boards, Department of Commerce, 16th and K streets, Washington 25, D. C.

Infant Mortality Rate Decreased.—Infant mortality declined further in 1946 from the low rate for 1945, the U. S. Public Health Service has announced. Provisional figures for the first ten months of 1946 indicate a decrease of 3.2 per cent from the rate for the same period of 1945. Final figures for 1945 released at this time show that the infant mortality rate of 38.3 deaths under 1 year per thousand live births was the lowest ever recorded for the United States. It is 3.8 per cent lower than the rate of 39.8 for 1944. Infant deaths numbered 104,684 in 1945. The maternal mortality rate of 2.1 per thousand live births for 1945 also showed a reduction of nearly 9 per cent from the rate of 2.3 for the previous year. The numbers of deaths from puerperal causes on which the maternal mortality rates are based were 5,668 and 6,369 respectively for 1945 and 1944. One factor contributing to the lower infant and maternal mortality rates is an increase from 1944 to 1945 in the proportion of babies delivered in hospitals; 78.8 per cent of all births registered in the United States were reported to have occurred in hospitals or other institutions in 1945.

Plotz Foundation Offers Grants for Research.—Twenty different research grants were given to institutions or investigators during 1946 by the Ella Sachs Plotz Foundation for the Advancement of Scientific Investigation. Applications for grants for 1947-1948 must be in the hands of the executive committee before April 15. Letters must state the qualifications of the investigator, accurate description of the research, the size of the grant requested and the specific use of the money to be expended. Applicants should also state whether or not they have approached other organizations for financial assistance and what other sources of support are relied on for research. Letters of recommendation are highly desirable. Applications should be addressed to Dr. Joseph C. Aub, Massachusetts General Hospital, Fruit Street, Boston 14. Maximum size of grants will usually be less than $500 to be used for research (1) directed toward the solution of problems of medicine or surgery or in branches of science bearing on medicine or surgery; (2) for the purchase of apparatus and supplies that are needed in special investigation and for the payment of unusual expenses incident to such special investigations but not for providing such materials that are normally part of laboratory equipment.

FOREIGN

Indian Journal of Radiology.—At the first Indian Congress of Radiology, Madras, recently the Indian Radiological Association authorized the publication of the *Indian Journal of Radiology* on a quarterly basis. The editors announce that they will appreciate receiving original articles or case reports for publication in the new journal. The editors are Drs. P. Rama Rau and K. M. Rai. The general secretary's office of the Indian Radiological Association is located at 155-157 Poonamallee High Road, Kilpauk, Madras.

International Congress of Obstetrics and Gynecology.—The International Congress of Obstetrics and Gynecology will be held in Dublin during the week beginning July 7 to celebrate the bicentennial of Rotunda Hospital. Representatives from all parts of the world will participate in the elaborate program. Dr. J. Hofbauer, Cincinnati, has accepted an invitation to be the official opening speaker on eclampsia. The program committee has chosen for discussion paramount problems of obstetrics. Messrs. Thomas Cook and Sons, Ltd., the authorized travel agency, will also accept registrations for the congress. The honorary secretary is Mr. G. F. Klingner, Rotunda Hospital, Dublin, Ireland.

Undergraduate Medical School Proposed.—The first undergraduate medical school in Palestine will be built under the joint auspices of the Hebrew University and Hadassah, Women's Zionist Organization of America, according to a statement of Eli Davis in the New York *Times*, November 22. Dr. Davis, who is deputy medical director of Hadassah in Jerusalem, is on a three month tour of American medical institutions to study methods. The new school will be built in Jerusalem on Mount Scopus adjoining the Hadassah Medical Center. It plans to admit 50 medical students next year and add 25 more dental and pharmacist studies. The new school will also make it possible to train 155 nurses instead of the 85 now being trained at the medical center. Eventually the capacity of the new school will be 400 students. Dr. Davis said the school will have a six year course with the possibility of extending it to seven years. One additional year of compulsory hospital residency will be required.

A Series of Abstract Journals.—Excerpta Medica, Inc., Amsterdam, is organizing and preparing a series of abstract journals covering the whole of medical science. These abstracts will be written in English and collected and edited in the Netherlands, but with the collaboration of a large number of specialists in other countries. The sections will be (1) anatomy, anthropology, embryology, histology; (2) physiology, biochemistry and pharmacology; (3) endocrinology; (4) microbiology and hygiene; (5) general pathology and pathologic anatomy; (6) internal diseases (also infectious diseases); (7) pediatrics; (8) neurology and psychiatry; (9) surgery (also orthopedics and urology); (10) obstetrics and gynecology; (11) otorhinolaryngology; (12) ophthalmology; (13) dermatology and venereology; (14) radiology, and (15) tuberculosis. Other sections may follow, as necessary, to meet specialist requirements. Chief editors of the *Excerpta Medica* are the professors A. P. H. A. de Kleijn, otorhinolaryngologist, M. W. Woerdeman, anatomist, and W. P. C. Zeeman, ophthalmologist, all at Amsterdam. The sections will be edited by section editors, experts in their fields in various countries, including the United States, assisted by responsible secretaries and by a large staff of technical assistants and linguists in addition to the commercial organizers and editors of the company. The first deliveries are promised in a few months' time and will continue at a rate once in a fortnight or monthly according to the volume of material. The Royal Netherlands Academy provides accommodation for all the books and periodicals abstracted in the *Excerpta*.

Marriages

Howard Franks Van Noate, Doylestown, Ohio, to Miss Marian Winifred Graham at Elkin, N. C., October 12.

Frank J. Moskal, Chicago, to Dr. Margaret I. Stemple of Morgantown, W. Va., November 28.

Alexander F. Thompson, New York, to Miss Helen Battle of Rocky Mount, N. C., September 11.

Stephen T. Whelan, Philadelphia, to Miss Virginia King Ball of Chestnut Hill, Pa., August 3.

Edward L. Waisbrot to Miss Janet Ginsburg, both of Canton, Ohio, November 30.

Joseph Warren West, Owego, N. Y., to Miss Jane McCay of Miami, Fla., October 13.

Deaths

Christopher Charles Beling ⊕ Newark, N. J.; born in Colombo, Ceylon, April 4, 1873; L.R.C.S. in Edinburgh, Scotland, in 1900; at one time connected with the government medical service of India; served as house surgeon of the government Civil Hospital at Colombo; came to the United States in 1900; appointed in 1901 to the staff of the New Jersey State Hospital for the Insane at Greystone Park; served as clinical assistant at the Vanderbilt Clinic in New York and as chief of the Neurological Clinic of the Newark City Dispensary; in 1908 was appointed attending neurologist and placed in charge of the first psychiatric clinic in New Jersey at St. Michael's Hospital in Newark; served as chief of the neuropsychiatric department of the Newark City Hospital; consulting neurologist or psychiatrist to the Essex County Hospital, Cedar Grove, New Jersey State Village for Epileptics at Skillman, Hospital of St. Barnabas, Presbyterian Hospital and Newark Eye and Ear Infirmary in Newark, Mountainside Hospital, Montclair, West Hudson Hospital, Kearny, Hackensack (N. J.) Hospital, Somerset Hospital, Somerville, Morristown (N. J.) Memorial Hospital, Newton (N. J.) Memorial Hospital and Monmouth Memorial Hospital, Long Branch; past president of the Morris County Medical Society; member, judicial council, since 1912 and chairman, committee on medical defense, since 1922, Medical Society of New Jersey; since 1912 charter member, Academy of Medicine of Northern New Jersey; member, New York Academy of Medicine, New York Neurological Society, New Jersey Neuropsychiatric Association, of which he had been president and councilor, British Medical Association, American Neurological Association, American Psychiatric Association, Association for Research in Nervous and Mental Diseases and the Society for Relief of Widows and Orphans of Medical Men of New Jersey, of which he had been a trustee since 1920; fellow of the American College of Physicians; founded the first juvenile clinic and bureau of mental hygiene in Newark; director of the bureau from 1919 to 1922; died in Montclair Nov. 30, 1946, aged 73, of hypertensive heart disease.

William Daniel Yavorsky ⊕ Commander, M. C., U. S. Navy, Cedar Rapids, Iowa; State University of Iowa College of Medicine, Iowa City, 1935; interned at the Jersey City Hospital in Jersey City; took postgraduate work at the New York Polyclinic and affiliated hospitals and the Universities of Budapest and Debrecen in Hungary; commissioned a lieutenant (jg) in the U. S. Naval Reserve; later commissioned in the regular navy; shortly after the attack on Pearl Harbor was sent into the Pacific area, where he rendered distinguished service as commander of a naval hospital unit; during fourteen months' service in the Pacific area was awarded a number of citations, including a presidential citation; returned to the United States in 1943 and was again sent to the Pacific area in 1944, returning to the United States in 1945; during the atomic bomb tests in 1946 at Bikini he was chief medical officer aboard the carrier *Boxer*; died in the Naval Hospital, Oakland, Oct. 18, 1946, aged 36, of poliomyelitis.

Alfred Lee Briskman ⊕ Louisville, Ky.; University of Louisville School of Medicine, 1927; fellow of the American College of Physicians; past president of the Colorado Tuberculosis Association; interned at the Ancon Hospital in Ancon, Canal Zone; lecturer to nurses at the Seton School of Nursing at Glockner Sanatorium and Hospital in Colorado Springs; resident chief physician, Union Printers Home and Tuberculosis Sanatorium, in Colorado Springs from 1929 to 1944, when he resigned to become medical director of the Jewish Consumptives' Relief Society Sanatorium in Spivak; died in Colorado Springs, Colo., Nov. 26, 1946, aged 44, of hypertension and cerebral thrombosis.

Perthas Calvert Chenoweth ⊕ Grafton, W. Va.; Emory University School of Medicine, Atlanta, 1928; served a residency at the Southside Community Hospital in Farmville, Va.; began active duty as a captain in the medical corps, Army of the United States, in July 1942, serving as a surgeon in the North African and Italian campaigns and was stationed at hospitals in the front lines in these theaters; honorably discharged in September 1945; member of the West Virginia Gynecological and Obstetrical Society; formerly on the staff of the Golden Clinic, Davis Memorial Hospital, in Elkins; died Nov. 25, 1946, aged 45, of pulmonary embolism following a cholecystectomy.

Robert Van Valzah ⊕ Goby, Va.; University of Pennsylvania Department of Medicine, Philadelphia, 1908; fellow of the American College of Physicians; chairman of medical advisory board number 13, Selective Service, U. S. Army, during World War I; specialist certified by the American Board of Internal Medicine; served as professor of medicine at the University of Wisconsin Medical School in Madison, where he had been physician to the State of Wisconsin General Hospital from 1925 to 1935; author of a chapter on "Diseases Due to Rickettsiae" in Musser's Internal Medicine; died Nov. 23, 1946, aged 64, of cardiac failure.

Kenneth Earle Lowman ⊕ Medical Director, Captain, U. S. Navy, Coronado, Calif.; born in Orangeburg, S. C., Feb. 23, 1890; Medical College of the State of South Carolina, Charleston, 1916; fellow of the American College of Surgeons; entered the U. S. Navy in 1917; senior surgeon on Admiral Thomas Hart's staff; formerly prisoner of war held by the Japanese; rescued in Mukden in 1945 and later assigned to duty on the retiring board of the Naval Hospital in San Diego; served on the old carrier *Saratoga;* died in Lake Henshaw, Oct. 26, 1946, aged 56, of an accidental gunshot wound while duck hunting.

Thomas Joseph Ball, Cambridge, Mass.; Harvard Medical School, Boston, 1887; instrumental in the founding of the Holy Ghost Hospital; died in the Cambridge City Hospital Nov. 12, 1946, aged 87.

Williston Wright Barker ⊕ Boston; Harvard Medical School, Boston, 1906; member of the New England Pediatric Society; affiliated with the Faulkner Hospital and the Evangeline Booth Maternity Hospital and Home; died Nov. 26, 1946, aged 64, of carcinoma.

Mott Parks Blair, Marshville, N. C.; Medical College of Virginia, Richmond, 1895; member of the American Medical Association; died Nov. 28, 1946, aged 79, of coronary thrombosis.

Dennis J. Borders, Redbud, Ga.; Atlanta Medical College, 1895; died Nov. 4, 1946, aged 73, of cerebral hemorrhage.

Charles Newton Brooks, East St. Louis, Ill.; Jenner Medical College, Chicago, 1910; Chicago College of Medicine and Surgery, 1912; died in St. Clair County Hospital, Belleville, Nov. 27, 1946, aged 71.

John Oliver Cook, Savannah, Ga.; University of Virginia Department of Medicine, Charlottesville, 1897; served during World War I; lieutenant colonel in the medical reserve corps, not on active duty; formerly affiliated with the Hospital for Epileptics and School for Feebleminded in Woodward, Iowa; died in the United States Marine Hospital Oct. 10, 1946, aged 71, of coronary thrombosis.

Arthur Garfield Cosby, Fountain Run, Ky.; St. Louis College of Physicians and Surgeons, 1922; member of the American Medical Association; died Nov. 18, 1946, aged 62.

George Dart Crossette, St. Paul; University of Minnesota College of Medicine and Surgery, Minneapolis, 1904; served as police surgeon; died in Morris, Minn., Nov. 29, 1946, aged 65, of angina pectoris.

Alexander J. De Grand, Chicago; Chicago College of Medicine and Surgery, 1916; member of the American Medical Association; died Nov. 18, 1946, aged 61, of chronic myocarditis.

John D. England, Axtell, Neb.; Bellevue Hospital Medical College, New York, 1887; president of the Farmers & Merchants Bank; died in November 1946, aged 88.

Clyde Mulhallon Fish ⊕ Pleasantville, N. J.; Jefferson Medical College of Philadelphia, 1897; member of the American College of Chest Physicians; fellow of the American College of Physicians; past president of the Atlantic County Medical Society; medical director of the Atlantic County Hospital for Tuberculous Diseases at Northfield; consultant in diseases of the chest and chief of the tuberculosis clinic at the Atlantic City Hospital, where he died Nov. 21, 1946, aged 71, of intracranial hemorrhage and multiple myeloma.

James Jerdan Fraley, Hominy, Okla.; Memphis (Tenn.) Hospital Medical College, 1903; served as mayor; died Nov. 10, 1946, aged 69, of cerebral thrombosis.

Joseph Witter Godfrey, Swampscott, Mass.; College of Physicians and Surgeons, Boston, 1890; member of the American Medical Association; past chairman of the school committee; vice president of the Union Hospital in Lynn, where he died Nov. 27, 1946, aged 79, of carcinoma of the liver.

Mark Joseph Haley, Margate City, N. J.; Maryland Medical College, Baltimore, 1911; died in the Atlantic County Hospital for Mental Diseases in Northfield Nov. 28, 1946, aged 67, of cerebral hemorrhage.

Joseph Underwood Hall, San Francisco; Jefferson Medical College of Philadelphia, 1889; fellow of the American College of Surgeons; formerly on the staff of the O'Connor Sanitarium in San Jose, Calif.; served during World War I; died Oct. 25, 1946, aged 78.

Edward H. J. Hennessey, Stratford, Conn.; University of Maryland School of Medicine, Baltimore, 1912; member of the American Medical Association; served during World War I; on the staffs of the Bridgeport Hospital and St. Vincent's Hospital in Bridgeport, where he died Nov. 1, 1946, aged 59.

John Samuel Hickman ⊕ Jamestown, N. Y.; Northwestern University Medical School, Chicago, 1915; fellow of the American College of Surgeons; served during World War I and later as a captain in the medical corps of the regular army, serving as flight surgeon in the air corps at Chanute Field, Rantoul, Ill.; chairman of the health and hospital board; on the staffs of the Jamestown General and Woman's Christian Association hospitals; died Nov. 11, 1946, aged 59.

Henry M. Hittner, Kansas City, Mo.; Rush Medical College, Chicago, 1893; died in Trinity Lutheran Hospital Oct. 21, 1946, aged 75, of coronary occlusion and hypertension.

Leslie W. Jones, Chicago; Chicago Homeopathic Medical College, 1897; died in the Loretto Hospital Nov. 28, 1946, aged 74, of a skull fracture received when struck by an interurban bus.

Joseph Abraham Koppel ⊕ Jersey City, N. J.; University of Wooster Medical Department, Cleveland, 1904; died Nov. 1, 1946, aged 68, of coronary occlusion.

Hugh Franklin Littell, Dayton, Ohio; Cleveland Medical College, Homeopathic, 1896; served as a member of the board of education; died Nov. 25, 1946, aged 86, of heart disease.

John Fredrick Martin, Stillwater, Okla.; University Medical College of Kansas City, Mo., 1905; member of the American Medical Association; died Oct. 31, 1946, aged 70.

Charles Russell Morgan ⊕ Boston; Tufts College Medical School, Boston, 1907; formerly an officer in the U. S. Navy; served during the Boxer Rebellion, in the Mexican Border War and in the Massachusetts National Guard; on the courtesy staffs of the Lawrence Memorial Hospital at Medford, Mass., Winchester Hospital at Winchester and the Symmes Hospital in Arlington; died Nov. 28, 1946, aged 68, of coronary occlusion.

Allen Thomas Moulton, Boston; University of Maryland School of Medicine, Baltimore, 1911; member of the American Medical Association; served overseas during World War I; for many years affiliated with the Cambridge City Hospital in Cambridge, Mass., Carney Hospital and Boston Dispensary; died in the Peter Bent Brigham Hospital Nov. 22, 1946, aged 56, of cardiac hypertrophy and pulmonary fibrosis.

Charles Miller Murry, Ripley, Miss.; Jefferson Medical College of Philadelphia, 1890; member of the American Medical Association; formerly member of the state board of health; for many years health officer of Tippah County; died Nov. 6, 1946, aged 78.

Patrick Eugene Nagle, St. Louis; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1880; died in the De Paul Hospital Nov. 1, 1946, aged 94, of prostatitis.

Earl Palmer ⊕ Logansport, Ind.; Rush Medical College, Chicago, 1906; formerly affiliated with the Northern Indiana Hospital for Insane; died in the Cass County Hospital Nov. 24, 1946, aged 64, of cardiovascular renal disease.

Fred Beverly Pickerel ⊕ Cincinnati; University of Cincinnati College of Medicine, 1921; interned at the Cincinnati General Hospital; member of the Cincinnati Academy of Medicine; on the staff of the Christ Hospital, where he died Nov. 15, 1946, aged 50, of coronary occlusion.

Milton Hickox Prosperi ⊕ Washington, D. C.; George Washington University School of Medicine, Washington, D. C., 1904; died Nov. 11, 1946, aged 68, of coronary occlusion.

Thomas Neely Reid, Matthews, N. C.; University of the City of New York Medical Department, 1891; honorary member of the Medical Society of the State of North Carolina; member of the American Medical Association; on the staff of the Presbyterian Hospital in Charlotte; died in the Mercy Hospital, Charlotte, Nov. 28, 1946, aged 78, of coronary occlusion.

George N. Seidlitz, St. Louis; the Hahnemann Medical College and Hospital, Chicago, 1884; Homeopathic Medical College of Missouri, St. Louis, 1884; formerly professor of ophthalmology and otology at the Homeopathic Medical College of Missouri; member of the American Medical Association; served on the staff of Christian Hospital, where he died Nov. 5, 1946, aged 85, of coronary thrombosis.

Wilfrid Dooris Sharp ⊕ Cleveland; Starling Medical College, Columbus, 1904; member of the Academy of Medicine of Cleveland and the Cleveland Medical Library; on the courtesy staff of the Glenville Hospital; died in the Cleveland Clinic Hospital Nov. 5, 1946, aged 65, of gastric hemorrhage and lymphosarcoma.

Samuel Anise Shoemaker, Orlando, Fla.; Medical College of Indiana, Indianapolis, 1898; member of the American Medical Association and the American Academy of Ophthalmology and Otolaryngology; died in Muncie, Ind., Nov. 6, 1946, aged 80.

Francis Jerome Short, Jersey City, N. J.; Georgetown University School of Medicine, Washington, D. C., 1904; for many years police surgeon; on the staff of St. Francis Hospital; died Nov. 4, 1946, aged 65.

Richard Curtis Smith ⊕ Drew, Miss.; Memphis (Tenn.) Hospital Medical College, 1902; past president of the Delta Medical Society, school board and Rotary Club; past vice president of the Merchants' and Planters' Bank, of which he was director; past member of the board of aldermen; died in the King's Daughters' Hospital, Greenville, Nov. 7, 1946, aged 70, of heart disease.

Philip Srebnik, New York; Long Island College Hospital, Brooklyn, 1909; died Nov. 12, 1946, aged 62, of coronary arteriosclerosis.

Charles Tiffany St. Clair, Bluefield, W. Va.; University of Virginia Department of Medicine, Charlottesville, 1896; fellow of the American College of Surgeons; member of the American Academy of Ophthalmology and Oto-Laryngology; specialist certified by the American Board of Otolaryngology; past president and secretary of the Virginia Society of Ophthalmology and Otolaryngology; died Nov. 17, 1946, aged 73, of heart disease.

Jonas Wakefield Stitzel, Hollidaysburg, Pa.; Hahnemann Medical College and Hospital, Philadelphia, 1896; died Nov. 13, 1946, aged 78, of chronic nephritis.

Charles Judson Tomer, Corning, N. Y.; University of the City of New York Medical Department, New York, 1887; served as city physician and county coroner; at one time connected with the Steuben Sanitarium, Hornell; died Nov. 5, 1946, aged 82.

Edwin James Glass Valentine Jr., Shelbyville, Ind.; New York Homeopathic Medical College and Flower Hospital in New York, 1933; member of the American Medical Association; interned at the Muhlenberg Hospital in Plainfield, N. J.; at one time plant physician for the E. I. du Pont de Nemours & Company in Charlestown; died in St. Francis' Hospital, Jersey City, Nov. 16, 1946, aged 44, of acute nephritis.

John William Wallace, Johnson City, Tenn.; Tennessee Medical College, Knoxville, 1892; member of the American Medical Association; served overseas during World War I; died in San Francisco Nov. 8, 1946, aged 76, of cholecystitis.

James L. Weddington ⊕ Hendersonville, N. C.; Southern Medical College, Atlanta, 1898; past president of the Henderson County Medical Society; on the staff of the Patton Memorial Hospital; died Nov. 6, 1946, aged 70, of heart disease.

Clifford Charles Wehn ⊕ Rockford, Ill.; Chicago College of Medicine and Surgery, 1914; served during World War I; died in St. Anthony's Hospital Nov. 15, 1946, aged 58, of coronary sclerosis.

Richard Frank Werner, Eau Claire, Wis.; Rush Medical College, Chicago, 1899; member of the American Medical Association and in 1911 a member of its House of Delegates; served on the staff of the Luther Hospital; died in Rochester, Minn., Nov. 24, 1946, aged 72, of myocardial infarction.

Alfred D. Wilkinson, Washington, D. C.; Georgetown University School of Medicine, Washington, D. C., 1893; formerly associated with the U. S. Pension Bureau and the Veterans Administration; died Nov. 14, 1946, aged 84, of cirrhosis of the liver and hypertension.

Lester Leo Williams ⊕ El Dorado, Kan.; Washington University School of Medicine, St. Louis, 1920; on the staff of the Susan B. Allen Memorial Hospital; died near Thatcher, Colo., Nov. 4, 1946, aged 51, of coronary occlusion.

Oscar Hermon Wilson, Ivyland, Pa.; Jefferson Medical College of Philadelphia, 1906; died Nov. 1, 1946, aged 66, of heart disease.

Graven Fields Winslow ⊕ White Plains, N. Y.; University of Virginia Department of Medicine, Charlottesville, 1924; fellow of the American College of Surgeons; served during World War I; interned at the Manhattan Eye, Ear and Throat Hospital in New York and the University of Virginia Hospital in University, Va.; served as consulting surgeon, Country Branch of New York Orthopedic Dispensary and Hospital; on the staff of the White Plains Hospital, where he died Nov. 13, 1946, aged 54, of coronary thrombosis.

Calvin Lee Woolsey, Braymer, Mo.; St. Louis University School of Medicine, 1906; member of the American Medical Association; died in November, aged 62, of coronary thrombosis.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 18, 1947.

The Controversy on the National Health Service

The final figures of the plebiscite of the whole profession, taken by the British Medical Association on the question whether to negotiate or not with the minister of health on the working of the National Health Service, have been declared. They show that 81 per cent of civilian practitioners voted and that of those who voted 45.5 per cent voted Yes and 54.5 per cent No. The representative body of the British Medical Association will meet on January 28 to decide what course shall be taken by the association. The presidents of the three Royal Colleges—of Physicians, of Surgeons and of Obstetrics and Gynecology—have now intervened by sending a joint letter to the minister of health, Mr. Bevan. They state that the opposition of a substantial part of the medical profession to renewal of discussions with the government regarding the National Health Service causes them concern. They recognize that certain of the principles of the service are incorporated in the act but that there are other issues of importance which will be determined by regulations, on which the form of the service will largely depend. They feel that there is an opportunity in framing the regulations to meet several of the objections of the profession. Moreover, the implications of some of the proposals for the service are not clear to the profession, and their clarification would be helpful. They hope, therefore, that the minister will clarify the following points and give an assurance that he will endeavor, within the framework of the act, to meet the views held so strongly by many practitioners.

The first point is a general one. They believe that behind the opposition is the fear that to enter into discussions would compromise the position of doctors by implying their approval of the main provisions of the act. In the general practitioners' part of the service the presidents find three points on which they think that a statement from the minister would be helpful. First, the method of remuneration is left to be dealt with by regulations. The minister has made clear his preference for a basic salary, apparently making it generally applicable because of difficulties in particular cases. It is agreed that there are circumstances in which a basic salary or a guaranteed minimum may be necessary, but this is not regarded as justifying a universal basic salary. Cannot the circumstances in which a basic salary is appropriate be left open for discussion? Secondly, a large element in the opposition of some practitioners is the fact that if the tribunal recommends the expulsion of a practitioner from the service his appeal is to be judged by the minister who has appointed two of the three members of the tribunal. Neither the words nor the spirit of the act prevent the minister from agreeing to seek the advice of the General Medical Council (the body which normally maintains professional discipline). In the third place there is a widespread fear that there will be serious interference with the liberty of movement of practitioners. It would be useful if the minister would explain how he anticipates that this part of the act will work, with particular reference to partnerships and groups. Among specialists there are also grounds for anxiety. As in the case of general practitioners there is the general issue of the freedom of the profession and the availability to the people of independent medical advice. The whole profession regards it as essential that independent practice should continue. The assurance that independent practitioners would be free to remain in attendance on their patients when admitted to the private wings of hospitals and also that consultants holding honorary positions on the staffs of hospitals would be free to use all the facilities provided had been gladly received.

In reply to the presidents' letter, the minister of health said that there was no ground for the fear that entering into discussion would compromise the position of the doctors. For them the issue was whether they would accept or forego the opportunity to influence the shaping of the service. He wanted their help and advice in this task. He denied the allegation that he had been unwilling to negotiate with the profession. Discussion had taken place, but this had necessarily been conditional, as he could not publish proposals before they had been submitted to Parliament. Nevertheless he and his officers had full discussions with the representatives of the profession. He then dealt with the specific points raised. The government had always accepted the view of the profession that remuneration should substantially be based on capitation fees but should include an element of salary. There were circumstances in which a guaranteed minimum was necessary, but he would like to discuss this with the profession. He was willing to discuss the second point with representatives of the profession. It was not true, as had been said, that doctors would become civil servants. Their full civic rights were preserved unimpaired. As to liberty of movement, there was no power to direct a doctor to go anywhere or to do anything, though there was a provision to avoid undue concentration of doctors in any one area. A doctor who desired to enter the service in a new area would have to obtain the approval of the central committee of nine, seven of whom would be medical practitioners appointed after consultation with the medical profession. In the case of a partnership the members would have the initiative in selecting a doctor. As to specialists, there would be no interference with clinical freedom, and it was a basic principle of the service that doctors engaged in independent specialist practice and that specialists should be free to continue and to remain outside or join the service as they wished. They would be able to treat their private patients in the private beds of their own or other hospitals subject to availability. The details of all these arrangements needed to be discussed with the profession.

The Difficulty of Finding a Cure for the Common Cold

The attempt to find a cure for the most prevalent of all diseases, the common cold, is proving very difficult. A research on the subject, described as a combined operation of the Medical Research Council and the Ministry of Health, has been proceeding for nearly a year. It was said that promising results were being obtained by the Common Cold Research Unit of the National Institute for Medical Research, but a warning was given against any optimistic notion that a cure for colds could be discovered without much more research. The importance of the problem is shown by the statements of Dr. W. H. Bradley, senior medical officer of the infectious diseases division of the Ministry of Health, that the total annual cost to the nation of upper respiratory infections is 40 million man days and that there occurs an average of three and one half attacks per person. Other disclosures were that attempts to grow the responsible virus in culture had not succeeded and that there was no hope of photographing the virus with the electronic microscope until large quantities had been obtained in isolation. Similar experiments were contemplated in America.

Dr. C. H. Andrewes of the Medical Research Council, who is in charge of the present investigation, states that the good progress made in recent years in work on influenza was largely due to the discovery in 1933 that ferrets could be infected with the disease. He is sure that corresponding advances could be made in the investigation of the common cold if a susceptible laboratory animal could be found. The only known laboratory

Edward H. J. Hennessey, Stratford, Conn.; University of Maryland School of Medicine, Baltimore, 1912; member of the American Medical Association; served during World War I; on the staffs of the Bridgeport Hospital and St. Vincent's Hospital in Bridgeport, where he died Nov. 1, 1946, aged 59.

John Samuel Hickman ⊕ Jamestown, N. Y.; Northwestern University Medical School, Chicago, 1915; fellow of the American College of Surgeons; served during World War I and later as a captain in the medical corps of the regular army, serving as flight surgeon in the air corps at Chanute Field Rantoul, Ill.; chairman of the health and hospital board;
the staffs of the Jamestown General and Woman's Chri
Association hospitals; died Nov. 11, 1946, aged 59.

Henry M. Hittner, Kansas City, Mo.; Rush M
lege, Chicago, 1893; died in Trinity Lutheran Ho
1946, aged 75, of coronary occlusion and hyper

Leslie W. Jones, Chicago; Chicago H
College, 1897; died in the Loretto Hospi
74, of a skull fracture received w
urban bus.

Joseph Abraham Koppel
of Wooster Medical Depart
1, 1946, aged 68, of coron

Hugh Franklin Li
College, Homeopath
of education; di

John Fred
cal Colle
America

Cl
Se

ic
Ca
died
56,

Ch
College
cal Ass
for man
1946, age

Patrick
Departmen
in the De

Earl Pal
Chicago, 19
Hospital for I
1946, aged 64.

Fred Bever
nati College o
General Hospit
Medicine; on th
Nov. 15, 1946, ag

Milton Hicko
Washington Univ
1904; died Nov. 1

Thomas Neel
City of New Yor
of the Medical S
of the Americ
Presbyterian Ho
Charlotte, Nov.

George N. S
College and H
College of Mi
ophthalmology
of Missouri;
served on the
5, 1946, aged

Wilfrid D
College, Colu
of Cleveland
courtesy sta
Clinic Hosp
and lympho

Samuel A
of Indiana, In
Association a
Otolaryngolo

Francis
Universit
many
died

become sufficiently common it would entail double administration, a further growth of social bureaucracy and a further removal of people from production at a time when thousands of men are needed for keeping the wheels of production turning.

There is another typical Social Democratic touch to this proposal, which is sure to become a law this year. At a time of an acute shortage of physicians, with the hospital corridors crowded with patients, and druggists working to the point of exhaustion, when in fact all medical facilities are being greatly strained as a result of the disproportion between supply and demand, this plan of hospitalization for all citizens in 1950 becomes somewhat of a grim joke, especially since the minister of commerce has succeeded in tying up a goodly share of Sweden's productive resources for the use of Russia for the next ten years. No one has as yet furnished a clear idea of how this trick of lifting oneself by the hair is to be accomplished, and only time will tell how this latest social reform will work out.

Proposal to Shorten Medical Schooling

Although the number of doctors per inhabitant is higher in Sweden than in many other countries, at present there is, as everywhere, a great shortage of physicians and there promises to be an even greater deficiency as new hospitals are built and new forms of social medicine develop. The Swedish Medical Board published a report recently in which it stressed the advisability of increasing the number of medical students immediately as much as possible. Unfortunately, the country's largest medical school is unable to accept even a third of those applying for entrance. An additional medical school is badly needed, for only 185 students are now able to enter the schools each year, while at least 300 are needed to fill future demands. With such an increase Sweden would have the same relative number of physicians as Norway, i. e. one per thousand inhabitants, but still not as many as Britain and Denmark. On the basis or reports from the United States and England it is now proposed that the overall period of study be shortened in an effort to produce more doctors faster, but this is a step needing much consideration and discussion in a conservative country like Sweden.

Physicians' Strike Settled

The threatened strike of physicians at two of Stockholm's largest hospitals was called off at the very last minute. The proposal made by the committee appointed to study the situation was accepted. Resident physicians are now permitted to charge fees for all the extra paper work they have to do, such as making out special certificates. However, they are no longer to be regarded as civil servants and therefore are not entitled to the advantages pertaining thereto, such as family pensions. Therefore the settlement of the strike was only semisatisfactory for the doctors, who although they do not wish to be civil servants, had hoped to retain the pensions. The formation of a new committee to investigate further the entire setup has been approved by the government and new changes are to be expected in time.

Aviation Medicine

A committee for the study of aviation medicine was recently established in Sweden with Professor G. Kahlson of Lund University as chairman. The committee is to take the initiative in research in aviation medicine, one of its first jobs being to work on the medical problems contributing to flying accidents and safety. Three laboratories have been set up, at the University of Lund, at the Caroline Institute and at the Institute of Physical Culture. "One would think it unnecessary," said Professor Kahlson, "to carry on independent research in Sweden in a subject which has been and is being so thoroughly covered by the British and Americans, not to mention the Russians. Unfortunately, however, the most important results achieved in those countries are still kept secret and we must therefore do our own research and no longer wait for information from other sources."

First Swedish Industrial Disease Clinic

The Swedish Medical Board has proposed the establishment of a badly needed clinic for industrial diseases at Caroline Hospital, which would be the first in Sweden. It is claimed that with all the new industries bringing with them new dangers to health, the time is definitely ripe for a central organization for the investigation of and research into industrial disease occurring throughout the country. A hospital is also planned in conjunction with the experimental body, with beds for about 25 patients.

Poliomyelitis Vaccine

A recent report published by Professors The Svedberg and Arne Tiselius and Dr. S. Gard stated that considerable progress has been made by investigators at Uppsala in the production of a poliomyelitis vaccine. Their experiments with mice have been successful in producing resistance against the disease. The work at Uppsala has been made possible through grants from King Gustav V's 80th Birthday Fund. By the beginning of 1948 it is hoped that King Gustav's Research Institute will be completed in Uppsala at a cost of 1.3 million kronor for the building and 200,000 kronor for the equipment. Various other foundations have contributed to the cost of an electron microscope and other special apparatus.

Influenza Vaccine

A vaccine against influenza is soon to be made in Sweden at the government bacteriological laboratory. Preparatory experiments have already been made and, as soon as a centrifuge ordered from the United States arrives, production is to begin on a large scale. The Swedes are still doubtful about the effectiveness of the vaccine but hope, as soon as more of the preparation becomes available, to determine on the basis of their own research just how satisfactory it is.

Russian Visitors to Stockholm

Several well known Russian physicians arrived in Stockholm recently, and more are to be expected. Professor Egorov, a prominent Soviet brain surgeon, Professor Anatole Frumkin, specialist in renal surgery, and Professor Holdin, cancer scientist, have already arrived. The Russians are guests of Caroline Institute; they will visit and study that institution and also hold lectures on their own experiences in medicine.

Scandinavian Cooperation in Research

Fourteen laboratories in the Scandinavian countries are combining their efforts in an extensive common program to study the thyroid hormones in order to determine the exact effective strength of thyroid gland preparations, according to Dr. Håkan Rydin, chairman of the Nordic committee which recently held a two day meeting in Stockholm. Fourteen pharmaceutical laboratories are working on the same problems and sharing experiences and results, thus saving much duplication of time and effort. The results of their experimentation will be published at the next meeting, scheduled to be held in Norway in the spring.

Death of Ole Chievitz

Professor Ole Chievitz, chief surgeon of the Finsen Institute, died recently at the age of 63. During the German occupation of Denmark he was known as one of the most energetic members of the resistance movement and was twice arrested by the Nazis. He was also of great assistance to Finland and was leader of the Red Cross ambulance unit that went to that country in 1918 and 1939. During the summer of 1941 he worked as a volunteer field surgeon in Finland until the Finnish troops reached the old border.

animal which can be infected with the common cold is the chimpanzee, which is expensive, scarce and difficult to handle. The need is for normal persons between the ages of 18 and 40 who are willing to accept the gentle discipline imposed during the tests of living in isolation, except for one partner, for ten days in the hospital. In his aim to establish a national panel of volunteers, Dr. Andrewes has invited the cooperation of business houses, who lose hundreds of pounds yearly in consequence of colds.

PARIS

(From Our Regular Correspondent)

Jan. 18, 1947.

Treatment of Kala-Azar

At a recent meeting of the Medical Society of the Paris Hospitals P. Durand, P. Benmussa and Caruand of Tunis reported their results in 6 cases treated with antimoniate of N-methyl glucamine, a new French antimony compound. They use it in a 30 per cent solution by intramuscular injections, 0.5 to 2 cc. for young children and 1 to 3 cc. for grown up children and adults in a series of fifteen injections three times a week; toleration is perfect even by young children. In the *Presse médicale* Paul Giraud and René Bernard of Marseilles set forth the good results they obtained with the same drug in 4 cases of kala-azar. Moreover, the authors praise a product called "diamidine," not yet on the market; it is 4-4 diamidino-diphenoxypentane, a powder which they use intramuscularly in a solution of 2 per cent, beginning with 0.5 cc. for the first two or three injections and going up to 2 cc. for young children and to 3 to 5 cc. for grown up children and adults. They make series of twelve to fifteen injections three times a week, with intervals of two to three weeks between the series. The results are excellent, the fever decreases rapidly, the volume of the spleen diminishes, and after two to three series the general condition improves. The death rate, which up to the present has been 10 to 15 per cent, tends to become nil.

Penicillin in Otorhinolaryngology

Leroux-Robert and Bezard stated that it is not otitis and mastoiditis which give the indication for penicillinotherapy but, and above all, their complications. Through it these investigators obtained splendid results in oculo-orbital accidents, ethmoiditis, osteomyelitis of the bones of the face, infantile suffocating and ulcerous laryngitis, and the plastic surgery of the face. They observed the cure of 4 cases of cavernous phlebitis, 2 cases of otogenic septicemia and 9 of confirmed meningitis. Lafitte-Dupont reported a cure of mastoiditis complicated with phlebitis of the sinus, meningitis and septicemia. Binet of Bourges obtained 85 per cent of cures in abscess of the brain through local penicillinotherapy without drainage by employing puncture and injecting penicillin afterward. Piquet had very good results by filling the cavity with sulfamidopenicillin powder.

A New Pharmacoradiographic Agent

In the *Archives de l'apparcil digestif* Guy Albot, Jacqueline Renaux and Emile Girard report experiments with intravenous insulin, which they use to get x-ray films of the pyloric niches, of the small prepyloric curvature or in duodenal tuberculosis. Up to now, morphine has been used for this purpose (Porcher's method). The authors inject 10 international units of insulin fifteen minutes before the absorption of the barium. After a short latent phase, slow and deep contractions are noted, and a large dilatation of the bulb and of the duodenum occurs; within five to six minutes more than the half of the meal is evacuated. Immediately after the examination the patient is given sugar by mouth, which makes all uncomfortable sensations disappear, sensations which are far less uncomfortable than those caused by morphine.

The Stability of Penicillin Solutions Treated with Formaldehyde

At a recent meeting of the Academy of Medicine G. Ramon and R. Richou reported the results of experimental research on the antibiotic properties of penicillin solutions treated with formaldehyde. They found that 0.03 to 0.1 per cent of the commercial solution does not diminish sensibly the antibiotic power of penicillin in solution. The solutions of penicillin so treated, or with formaldehyde and simultaneously heated at 55 C. proves relatively stable. These solutions can be kept in a cool room (+ 2 to + 4 C.) during three months or at a temperature of + 15 to + 20 C. during one month. These results, which have to be submitted to clinical control, may be of great clinical interest.

Medical Students in Paris

Among the 45,414 students of the Paris University in 1946 there were 8,209 at the Faculty of Medicine and 2,452 at the Faculty of Pharmacy. Among the medical students, there were 6,192 French boys and 1,721 French girls, 162 foreign boys and 26 foreign girls, 102 students of the overseas territories and 6 girls of the same origin. At the Faculty of Pharmacy there were 1,084 French boys, 1,323 French girls, 15 foreigners and 30 students of the overseas territories.

Congress of the French Society of Otorhinolaryngology

The forty-fourth Congress of the French Society of Otorhinolaryngology convened in Paris on the 21st of October under the presidency of André Moulonguet and was attended by a large number of French and foreign specialists.

SWEDEN

(From Our Regular Correspondent)

STOCKHOLM, *Jan. 4, 1947.*

Free Medical Care from 1950

Social reforms come thick and fast in Sweden now that the Social Democrats, judging from the trend of recent elections, feel some of their power slipping away. Last year a new complex of old age pensions was passed by the Riksdag, and before that body convened for the Christmas holiday the social minister presented his much debated proposal for general sickness insurance. The new legislation, to become effective July 1, 1950, includes free hospitalization for all, certain prescribed medicines at no cost, and others at half cost. All Swedes are to be compelled to be insured, and in their insurance benefits are to be included, in addition to the foregoing, compensation for doctor's care and travel expenses to the doctor. Adults are to receive a sickness benefit of 3.50 kronor a day, while adolescents and pensioners are to get 2 kronor and housewives 1.50 kronor a day. To this is added a child benefit of 0.50 kronor per child a day. The compulsory insurance does not do away with the voluntary insurance plans which give daily benefits of 1.50, 3 and 4.50 kronor. The combined maximum benefits under the plan will thus be 8 kronor a day for single persons and 10 kronor for married persons without children. The cost of the compulsory insurance will be 24 kronor a year for a daily benefit of 3.50 kronor and 16 kronor for a daily benefit of 2 kronor. These costs are to be added to the tax bill.

The debate has raged chiefly on the question of uniform versus graded daily benefits in the compulsory insurance, and the minister's plan passed the committee by a narrow margin. The most serious criticism leveled against the uniform minimum benefit of 3.50 kronor a day is that it is quite insufficient to cover the fixed daily cost of living of the majority of wage earners, who would need to supplement it with voluntary insurance in order to cover their economic commitments during a few weeks of sickness. Should this necessary supplement become sufficiently common it would entail double administration, a further growth of social bureaucracy and a further removal of people from production at a time when thousands of men are needed for keeping the wheels of production turning.

There is another typical Social Democratic touch to this proposal, which is sure to become a law this year. At a time of an acute shortage of physicians, with the hospital corridors crowded with patients, and druggists working to the point of exhaustion, when in fact all medical facilities are being greatly strained as a result of the disproportion between supply and demand, this plan of hospitalization for all citizens in 1950 becomes somewhat of a grim joke, especially since the minister of commerce has succeeded in tying up a goodly share of Sweden's productive resources for the use of Russia for the next ten years. No one has as yet furnished a clear idea of how this trick of lifting oneself by the hair is to be accomplished, and only time will tell how this latest social reform will work out.

Proposal to Shorten Medical Schooling

Although the number of doctors per inhabitant is higher in Sweden than in many other countries, at present there is, as everywhere, a great shortage of physicians and there promises to be an even greater deficiency as new hospitals are built and new forms of social medicine develop. The Swedish Medical Board published a report recently in which it stressed the advisability of increasing the number of medical students immediately as much as possible. Unfortunately, the country's largest medical school is unable to accept even a third of those applying for entrance. An additional medical school is badly needed, for only 185 students are now able to enter the schools each year, while at least 300 are needed to fill future demands. With such an increase Sweden would have the same relative number of physicians as Norway, i. e. one per thousand inhabitants, but still not as many as Britain and Denmark. On the basis or reports from the United States and England it is now proposed that the overall period of study be shortened in an effort to produce more doctors faster, but this is a step needing much consideration and discussion in a conservative country like Sweden.

Physicians' Strike Settled

The threatened strike of physicians at two of Stockholm's largest hospitals was called off at the very last minute. The proposal made by the committee appointed to study the situation was accepted. Resident physicians are now permitted to charge fees for all the extra paper work they have to do, such as making out special certificates. However, they are no longer to be regarded as civil servants and therefore are not entitled to the advantages pertaining thereto, such as family pensions. Therefore the settlement of the strike was only semisatisfactory for the doctors, who although they do not wish to be civil servants, had hoped to retain the pensions. The formation of a new committee to investigate further the entire setup has been approved by the government and new changes are to be expected in time.

Aviation Medicine

A committee for the study of aviation medicine was recently established in Sweden with Professor G. Kahlson of Lund University as chairman. The committee is to take the initiative in research in aviation medicine, one of its first jobs being to work on the medical problems contributing to flying accidents and safety. Three laboratories have been set up, at the University of Lund, at the Caroline Institute and at the Institute of Physical Culture. "One would think it unnecessary," said Professor Kahlson, "to carry on independent research in Sweden in a subject which has been and is being so thoroughly covered by the British and Americans, not to mention the Russians. Unfortunately, however, the most important results achieved in those countries are still kept secret and we must therefore do our own research and no longer wait for information from other sources."

First Swedish Industrial Disease Clinic

The Swedish Medical Board has proposed the establishment of a badly needed clinic for industrial diseases at Caroline Hospital, which would be the first in Sweden. It is claimed that with all the new industries bringing with them new dangers to health, the time is definitely ripe for a central organization for the investigation of and research into industrial disease occurring throughout the country. A hospital is also planned in conjunction with the experimental body, with beds for about 25 patients.

Poliomyelitis Vaccine

A recent report published by Professors The Svedberg and Arne Tiselius and Dr. S. Gard stated that considerable progress has been made by investigators at Uppsala in the production of a poliomyelitis vaccine. Their experiments with mice have been successful in producing resistance against the disease. The work at Uppsala has been made possible through grants from King Gustav V's 80th Birthday Fund. By the beginning of 1948 it is hoped that King Gustav's Research Institute will be completed in Uppsala at a cost of 1.3 million kronor for the building and 200,000 kronor for the equipment. Various other foundations have contributed to the cost of an electron microscope and other special apparatus.

Influenza Vaccine

A vaccine against influenza is soon to be made in Sweden at the government bacteriological laboratory. Preparatory experiments have already been made and, as soon as a centrifuge ordered from the United States arrives, production is to begin on a large scale. The Swedes are still doubtful about the effectiveness of the vaccine but hope, as soon as more of the preparation becomes available, to determine on the basis of their own research just how satisfactory it is.

Russian Visitors to Stockholm

Several well known Russian physicians arrived in Stockholm recently, and more are to be expected. Professor Egorov, a prominent Soviet brain surgeon, Professor Anatole Frumkin, specialist in renal surgery, and Professor Holdin, cancer scientist, have already arrived. The Russians are guests of Caroline Institute; they will visit and study that institution and also hold lectures on their own experiences in medicine.

Scandinavian Cooperation in Research

Fourteen laboratories in the Scandinavian countries are combining their efforts in an extensive common program to study the thyroid hormones in order to determine the exact effective strength of thyroid gland preparations, according to Dr. Håkan Rydin, chairman of the Nordic committee which recently held a two day meeting in Stockholm. Fourteen pharmaceutical laboratories are working on the same problems and sharing experiences and results, thus saving much duplication of time and effort. The results of their experimentation will be published at the next meeting, scheduled to be held in Norway in the spring.

Death of Ole Chievitz

Professor Ole Chievitz, chief surgeon of the Finsen Institute, died recently at the age of 63. During the German occupation of Denmark he was known as one of the most energetic members of the resistance movement and was twice arrested by the Nazis. He was also of great assistance to Finland and was leader of the Red Cross ambulance unit that went to that country in 1918 and 1939. During the summer of 1941 he worked as a volunteer field surgeon in Finland until the Finnish troops reached the old border.

Bureau of Investigation

MISBRANDED PRODUCTS

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the Federal Security Agency

[EDITORIAL NOTE.—These Notices of Judgment are issued under the Food, Drug and Cosmetic Act, and in cases in which they refer to drugs and devices they are designated D. D. N. J. and foods, F. N. J. The abstracts that follow are given in the briefest possible form (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the date of shipment; (4) the composition; (5) the reason for the charge of misbranding, and (6) the date of issuance of the Notice of Judgment—which is considerably later than the date of the seizure of the product and somewhat later than the conclusion of the case by the Food and Drug Administration]

Abbott Bros. Compound—Pinus Medicine Company, Monticello, Ill. Shipped April 21 and Sept 29, 1941 Composition essentially water, alcohol, sodium salicylate, sodium phosphate, potassium nitrate, extracts of plant materials and flavoring Misbranded because labeling falsely represented product as a treatment for muscular aches and pains in the limbs, sides and back —[*D D. N. J, F D C. 1158, June 1945*]

Anti-Uric.—Anti Uric Company, San Francisco Shipped April 1, 1943. Composition essentially water, alcohol, sugar and small amounts of plant drug extracts. Misbranded because of misrepresentations on label and in accompanying literature that product was an effective eliminant and stimulant diuretic and useful for relieving rheumatic, neuralgic, sciatic, neuritic and muscular pains, upset stomach and some other disorders —[*D. D. N. J., F. D. C. 1138, June 1945*]

Balm.—Oriental Laboratory, St Louis Shipped March 22, 1943 Composition: small amounts of carbolic acid, creosote, camphor and pine tar, in a petrolatum base Misbranded because label failed to warn adequately against unsafe methods of applying this article containing carbolic acid, and falsely represented it as an all purpose ointment for any skin injury or disorder.—[*D. D. N. J., F. D. C. 1156; June 1945*]

Basic Endocrines Nostrums.—Basic Endocrines Sales Company, Inc., Seattle and Salt Lake City. Shipped on various dates in December 1942. In addition to plant and glandular substances, a small amount of dicalcium phosphate was found in No 37 Formula GH-5; matter derived from bile, in No 24 Formula GH-1; thyroid in No 15 Formula GM-15 and No. 3 Formula GM 4 No. 20 Formula GH 4 consisted essentially of animal tissues. Misbranded because of these misrepresentations: That No. 37 was a competent treatment for diabetes mellitus, would increase blood and tissue calcium and relieve pain and nervousness; that No 24 would cure or mitigate liver hypofunction, cirrhosis, cardiac irregularities and some other disorders; that No 15 was efficacious for many ailments, including sexual neurasthenia, premature senility and general debility; that No 3 would help chronic hypo-ovarism and sexual asthenia, among others, and that No 20 was useful in treating many conditions, including acute toxemia, toxic migraine and food allergy.—[*D. D. N. J, F. D. C. 1137, June 1945*]

Buffalo Mineral Water.—Buffalo Mineral Springs Company, Inc, Buffalo Springs, Va. Shipped June 21, 1943. Composition: product reported as a lightly mineralized water. Misbranded because of false representations in accompanying literature that product would improve or restore health and be of great benefit in treating kidney disorders, diabetes, stone or inflammation in the bladder, Bright's disease, alcoholism and many other conditions —[*D. D. N J, F. D. C. 1184; June 1945*]

Corley's Nostrums—Dr. Buren L Corley, trading as Dr. Corley's Products, San Francisco Shipped July 7 and Sept. 12, 1942 Composition: Dr. Corley's Alkaline Broth—essentially plant material, including kelp and celery, with meat extractive and sodium chloride; Dr. Corley's Garlic Tablets—essentially ground vegetables, such as parsley, garlic and onions; Dr. Corley's Laxx—essentially a mixture of karaya gum, whole psyllium seed, anise seed, senna leaf fragments, a small amount of peppermint leaf particles, a trace of buckthorn bark and unidentified seeds, stems and woody material Broth misbranded because falsely represented to be efficacious in alkalizing the blood, neutralizing or combating body acids and treating anemia, asthma, high or low blood pressure, hay fever, rheumatism, and many other disorders Garlic Tablets misbranded because represented as helpful for intestinal inflammation Laxx misbranded because falsely represented to cleanse the intestines thoroughly.—[*D. D. N J., F D. C. 1179, June 1945*]

Fruitola and Traxo.—Pinus Medicine Company, Monticello, Ill Shipped April 21 and Sept. 29, 1941. Fruitola composition: powders (in blue paper): sodium bicarbonate and Rochelle salt; (in white paper): tartaric acid; liquid essentially olive and anise oils Traxo composition: essentially alcohol, water, and extracts of plant materials, including emodin, podophyllin and strychnine Fruitola misbranded because label gave false impression that product would help to clear intestinal tract and regulate flow of bile. Also misbranded because name and label reference to "fruit oils" falsely represented that ingredients were derived from fruits. Traxo misbranded because label falsely represented that article was a tonic and stimulant to the digestive tract and its nerve system; that, when used with Fruitola, it would increase the efficacy of that product, and that label failed to warn against using Traxo, a laxative, when nausea, vomiting, abdominal pains or other symptoms of appendicitis are present —[*D. D. N. J, F. D. C. 1158, June 1945*]

Huzzah, A Vitamin B_1 & B_2 Supplement.—Huzzah Corporation of America, Chicago. Shipped Nov. 20, 1943. Composition: essentially a water solution of glycerin, caramel and phosphoric acid, containing vitamin B_1 and riboflavin. Misbranded because label falsely represented that product would prevent physiologic reactions due to alcoholism, prevent or correct low resistance to alcoholic stimulants, nervousness, exhaustion, headaches, faulty digestion, stunted growth and certain skin disorders, and provide energy and strength —[*D. D. N. J, F. D. C. 1186; June 1945.*] Also misbranded under provisions of the law applicable to foods, as reported in *F. N. J. 6200.*

Hydraphorus with Cinchona.—Leon Chemical Company, Springfield, Mo Shipped Oct 13, 1942 Composition essentially water, with a small amount of phosphoric acid. Label claims as to presence of hydrastis and cinchona misleading, since only traces of these drugs were found. Misbranded for this reason and because label falsely declared that glycerin was an ingredient —[*D. D. N. J., F. D. C. 1141; June 1945.*]

Medrex Ointment and Soap.—William A. Reed Company, Philadelphia Shipped April 7, May 12 and June 30, 1942. Composition Ointment essentially zinc oxide and petrolatum, with small amounts of acetanilid, starch, methyl salicylate, and carbolic, benzoic and salicylic acids; soap contained small amounts of a zinc compound, starch and salicylic acid Misbranded because labeling falsely represented that, when used as directed, both products would be effective for relief of itching and irritation accompanying eczema, and for the treatment of pimples, scalp eruptions, blotches and other skin disorders of external origin —[*D. D. N. J, F. D. C. 1135 and 1230, June 1945*]

Minra.—Stayner Corporation, Berkeley, Calif. Shipped Jan. 30, 1941 Composition: dextrose, about 45 per cent, citric acid, about 28 5 per cent, sodium and potassium bicarbonates, phosphates, salts of iron and calcium, small amounts of manganese and magnesium compounds, and less than 0 001 per cent of copper. Misbranded because mention of calcium lactate on label failed to reveal that the amount of calcium obtained in a directed dose was much less than the normal requirement for this mineral, and because of misleading label representation that recommended dosage supplied sufficient dextrose to relieve fatigue; that use of product would maintain or restore bodily health, make up for calcium deficiency, and (according to circular) would relieve stomach distress, develop muscles, correct impure blood, build strong bones and sound teeth, and do a good many other things —[*D. D. N. J, F. D. C. 1181, June 1945*]

Ourine.—Aurine Company, Inc., Chicago. Shipped between April 6, 1943, and Jan 26, 1944. Product formerly sold as "Aurine." Composition: essentially water, glycerin, boric acid (1.1 per cent), carbolic acid (0.18 per cent) and traces of alcohol, camphor, clove oil and extracts of plant drugs. Misbranded because accompanying booklet, "The Care of the Ears," falsely represented that product, when used as directed, would prevent or remedy deafness, effect good hearing through alleged antiseptic, analgesic, astringent or anesthetic properties; was a safe and appropriate treatment for earaches resulting from bulging or congestion of the tympanic drum; would act as a tonic and relieve local catarrhal conditions, pain, soreness or inflammatory disorders, protect the skin and mucous membranes, overcome ineffective hearing, and had been successfully used by thousands for relief of temporary or partial deafness —[*D. D. N. J., F. D. C. 1136, June 1945.*]

Phenolix Elixir Phenobarbital.—Wayne Pharmacal Supply Company, Fort Wayne, Ind Shipped Nov. 10, 1942. Adulterated because not conforming to standard strength of elixir of phenobarbital. Misbranded because label did not declare quantity or proportion of phenobarbital, a derivative of barbituric acid, a hypnotic substance, or warn that product might be habit forming —[*D. D. N. J., F. D. C. 1163; June 1945*]

Sul-Ray Effervescent Mineral Baths.—Sante Chemical Company, New York. Shipped May 27, 1943 Composition: essentially sulfur, with sodium phosphate, carbonate and borate. Misbranded because labeling falsely represented that product would supply benefits otherwise obtained from a visit to mineral springs and that sulfur in bath water would be effective in treating rheumatism, arthritis, lumbago, gout, sciatica, various skin disorders, muscular aches and itching —[*D. D N. J, F. D. C 1130, June 1945*]

Vbev.—Healthaids, Inc, Jersey City, N J. Shipped July 8, 1941 Composition (claimed on label): diastasic malt syrup, dextrose, whole liquid milk, tricalcium phosphate, ferric pyrophosphate—soluble, molasses, natural vitamin B complex and "Vitamin A and D Concentrate" Government chemists reported that product contained 796 milligrams of calcium per ounce, whereas label falsely gave the figure as 1000 Hence misbranded, and also because of false label claim that product was a new discovery and a new food beverage, developed after years of scientific research and investigation, whereas it was merely a combination of two well known foods. Further misbranded because label falsely represented Vbev as efficacious in the prevention or treatment of a variety of disorders, such as infections, diarrhea, stunted growth and loss of hair, and as providing a valuable supplementary supply of natural B complex, as well as vitamins A and D and the vital minerals calcium, phosphorus, iron and copper —[*D D N J, F. D. C. 1127, June 1945*]

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Dentist's Negligence in Sawing Bridge.—The plaintiff sued for damages for injuries to her face and jaw alleged to have resulted from the negligence of defendant in the removal of a partial denture. From a judgment in favor of the plaintiff the defendant appealed to the Supreme Court of Kansas.

The Supreme Court said that, in the absence of a special contract, a surgeon is not required to exercise extraordinary skill and care but is only required to possess and exercise the degree of skill, care and learning ordinarily possessed and exercised under similar circumstances by members of his profession in the community where the defendant practices, and to use ordinary and reasonable care and his best judgment in the application of his skill to the case.

The plaintiff testified that she consulted the defendant dentist with reference to an extraction. He first thought he could remove a bridge by pulling it off of two teeth but then decided to remove it by using an electric saw. She said he had to "slip the saw, which was round, inside her mouth and had to pull her mouth down to get the saw in." The plaintiff also stated that the defendant did not pad her mouth in any way and put no appliances on her lower lip, but that he did move her lower lip back and her upper lip up. When he started to cut, the saw slipped off and went through her mouth.

The only expert witness called by the plaintiff testified that he had practiced dentistry in Wichita since his graduation from the Kansas City College of Dental Surgery in 1896 and that he had formed an opinion as to what a dentist in that city should give patients with reference to skill, intelligence and learning in treatment. After being shown the bridge which had been removed from plaintiff's mouth, he was asked whether or not, from his years of practice in Wichita, he was familiar with the usual, proper and careful method used by dentists in good standing in April of 1944 for removal of such bridges. On answering that he was, he was asked whether or not the defendant, assuming he attempted to remove the bridge without using any cotton or padding and without using a depressor to hold her lip back and protect it, was acting with the proper, careful and skilful method of removing a similar bridge by dentists of good standing in Wichita. He stated that the defendant was not. On cross examination, however, this expert stated that he did not know whether certain named dentists used metal depressors or not and had never been in the offices of other dentists in Wichita. He further stated that each man has his own method of doing things and that he would not say yes or no on whether use of wooden spatulas for a depressor was an unsafe method, but he added that if the plaintiff had had a Liberty Depressor on her lower lip it would not have been cut.

The defendant argued that in view of the evidence of the plaintiff's expert witness that he had not visited the offices of other dentists in Wichita, which was brought out during cross examination, he could not testify to what they did and therefore there was a lack of expert testimony of the skill and care commonly used by other dentists in like cases in the community. This ignores the direct testimony of the witness as to what he was taught in a reputable dental college and what he had subsequently learned through medical books and periodicals as to the proper methods of treatment and care to be used in similar operations. We conclude, said the Supreme Court, that the trial court did not err in refusing judgment for the defendant at the end of the plaintiff's evidence.

Concerning the defendant's motion for a directed verdict at the close of all the evidence, said the court, we understand that the defendant contends that when he testified as to how he performed the operation and plaintiff failed to rebut this testimony, it left the whole of the evidence in such condition that there was no sufficient, competent evidence to support any verdict in plaintiff's favor. The defendant's description of the operation was, briefly, that while his nurse assistant held back the cheek and lower lip with two wooden depressors and he used another to hold the top, he used the saw with his right hand and cut the bridge. In our opinion, said the Supreme Court, the defendant's contention cannot be sustained. The plaintiff in her case in chief offered proof that in the performance of the operation the defendant had not used depressors of any kind. It was not necessary, after defendant had offered his proof to the contrary, that plaintiff deny his version or again repeat her own.

Accordingly the Supreme Court held that the trial court did not err in any of its rulings and the judgment in favor of the plaintiff was affirmed.—*Harris v. Exon, 170 P. (2d) 827 (Kan., 1946).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS
EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Boards in Specialties were published in THE JOURNAL, Feb. 1, page 347.

BOARDS OF MEDICAL EXAMINERS

ARKANSAS:* *Medical. Examination.* June 5-6. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, June 5. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Examination.* Los Angeles, March 10-13. Sec., Dr. Frederick N. Scatena, 1020 N. St., Sacramento 14.

CONNECTICUT:* *Medical. Examination.* Hartford, March 11-12. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven. *Homeopathic.* Derby, March 11. Sec., Dr. J. H. Evans, 1488 Chapel St., New Haven.

GEORGIA: Atlanta and Augusta, June. Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

INDIANA: *Examination.* Indianapolis, June. Exec. Sec., Board of Medical Registration and Examination, Miss Ruth V. Kirk, 627 K. of P. Bldg., Indianapolis.

IOWA:* *Examination.* Iowa City, March 17-19. Corresponding Sec., Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

KANSAS: *Examination.* Kansas City, March 25-26. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. Seventh St., Kansas City 10.

MAINE: Portland, March 11-12. Sec., Board of Registration of Medicine, Dr. A. P. Leighton, 192 State St., Portland.

MASSACHUSETTS: Boston, March 11-14. Sec., Board of Registration in Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston 33.

MONTANA: Helena, April 1-2. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.

NEBRASKA:* *Examination.* Omaha, June. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, State Capitol Bldg., Lincoln.

NEVADA: *Examination.* Carson City, May 5. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

NEW HAMPSHIRE: Concord, March 13. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

NEW JERSEY: Trenton, June 17-18. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO:* Santa Fe, April 7-8. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NORTH CAROLINA: *Endorsement.* Winston-Salem, April 30, June 24. *Examination.* Raleigh, June 23-26. Acting Sec., Mrs. L. McNeill, 226 Hillsboro St., Raleigh.

PENNSYLVANIA: Philadelphia and Pittsburgh, July. Acting Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

TEXAS: *Examination.* Galveston, Feb. 20-22. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

---

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: March 18, Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

DISTRICT OF COLUMBIA: Washington, April 21-22. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

FLORIDA: May 31. Sec., Dr. M. W. Emmel, University of Florida, Gainesville.

IOWA: Des Moines, April 8. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

OKLAHOMA: Oklahoma City, March 17. Sec., Dr. J. D. Osborn, Jr., Frederick.

OREGON: Portland, March 1. Sec., Board of Higher Education, Mr. C. D. Byrne, University of Oregon, Eugene.

RHODE ISLAND: Providence, Feb. 12. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

32:545-678 (Nov.) 1946

Rheumatic Fever and Rheumatic Heart Disease in North African and Mediterranean Theater of Operations, United States Army. E. F. Bland.—p. 545.

Notes on Similarity of QRS Complex Configurations in Wolff-Parkinson-White Syndrome. G. E. Burch and J. L. Kimball.—p. 560.

Syndrome of Abdominal Aortic Aneurysm Rupturing into Gastrointestinal Tract: Summary of Literature and Case Report. H. H. Hunt and C. V. Weller.—p. 571.

Auricular Diastolic Murmur with Heart Block in Elderly Patients. D. A. Rytand.—p. 579.

Hypertrophy of Heart of Unknown Etiology in Young Adults: Report of 4 Cases with Autopsies. R. F. Norris and H. H. Pote.—p. 599.

*Parenteral Vitamin B as Agent for Determining Arm to Tongue Circulation Time: Part I. R. E. Swenson.—p. 612.

*Combined Use of Lanatoside C and Quinidine Sulfate in Abolition of Established Auricular Flutter. R. M. Tandowsky, J. M. Oyster and A. Silverglade.—p. 617.

Electrocardiographic Changes Occurring During Treatment with Fuadin Solution. S. B. Beaser and R. Rodriguez-Molina.—p. 634.

Orthostatic Paroxysmal Ventricular Tachycardia. M. Peters and S. L. Penner.—p. 645.

Parenteral Vitamin B for Determination of Circulation Time.—Swenson determined the arm to tongue circulation time by injecting 5 cc. of a solution of vitamin B into the antecubital vein and letting the subject tell when he tasted the substance. In a control group of 50 normal subjects the average time was found to vary from 9.8 to 10.3 seconds for the initial and duplicate determinations respectively. Similar determinations were also made on 52 patients with heart disease. It was found that the circulation time determined by this method parallels the time reported for other test agents. The vitamin B preparation used appears to be nontoxic, has little effect on circulatory dynamics, is readily available, is eliminated rapidly, and has an abrupt end point. The side reactions are minimal.

Lanatoside C and Quinidine Sulfate for Auricular Flutter.—Tandowsky and his associates, using both lanatoside C and quinidine sulfate, observed that, when used in proper sequence, these drugs are valuable for the conversion of established auricular flutter into normal sinus rhythm. Lanatoside C in full digitalizing dosage (1.6 mg.) followed by maintenance dosage (1 to 2 mg. daily) frequently converts auricular flutter to auricular fibrillation and less frequently to sinus rhythm. Following the administration of this drug a slowing of the ventricular rate occurs which is due chiefly to increased auriculoventricular block. This slowing usually precedes the conversion of auricular flutter to auricular fibrillation. Following this conversion by lanatoside C, the use of quinidine has proved of especial value. Maintenance dosage of lanatoside C has proved of value as prophylactic therapy following the restoration of normal sinus rhythm.

American Journal of Clinical Pathology, Baltimore

16:671-736 (Nov.) 1946

Clinical Pathology in the Eighties and Nineties. G. Dock.—p. 671.

Extrinsic Factors Influencing Sedimentation Rate. M. S. Rosen.—p. 681.

Bone Lesions in Early Syphilis: Report of Case. A. M. Lefkovits and K. R. Cross.—p. 693.

Skeletal Lymphosarcomatosis with Secondary Hyperparathyroidism. A. van der Sar and P. H. Hartz.—p. 701.

Clonorchiasis: Report of 2 Cases. E. B. Helwig and R. G. Brown.—p. 714.

Comparison of Methods for Recovery of Eggs of Schistosoma Japonicum from Feces. G. W. Hunter III, J. W. Ingalls and Minna G. Cohen.—p. 721.

American J. Digestive Diseases, Fort Wayne, Ind.

13:341-372 (Nov.) 1946

*Increased Excretion of Glucuronates After Ingestion of Benzoic Acid by Patients with Damaged Liver. I. Snapper, A. Saltzman and E. Greenspan.—p. 341.

Hypertrophic Gastritis Simulating Neoplasm. J. Bank, A. E. Pearce and J. H. Gilmore.—p. 344.

Regional Enteritis and Idiopathic Ulcerative Colitis: Clinical Study. B. J. Weinberg, H. Sorter and H. Necheles.—p. 346.

Clinical Research. H. W. Soper.—p. 350.

Regional Ileitis. Ischiorectal Fistula Preceding and Following Operation for Ileitis: Report of Case. M. Golob.—p. 352.

*Amebiasis: Role of Bacteria in Symptomatology: I. Sigmoidoscopic Findings in Symptomatic and Asymptomatic Cases; II. Effect of Sulfadiazine on Symptoms and Sigmoidoscopic Findings. M. Ellenberg.—p. 356.

Banti's Syndrome Following Prolonged Infectious Hepatitis: Report of 2 Cases. R. L. Fisher and M. Zukerman.—p. 361.

Pathogenesis and Mechanism of Cirrhosis of Liver. A. O. Wilensky.—p. 367.

Glucuronate Excretion Test of Hepatic Function.—Snapper and his associates found that after ingestion of 5 Gm. of benzoic acid by patients with liver cirrhosis or hepatitis the glucuronate reactions are always positive in the second two hour urine specimen, and they are generally also positive in the first and third two hour specimens. This glucuronate excretion is a sensitive liver function test. If after ingestion of 5 Gm. of benzoic acid, none of the three two hour specimens show a positive glucuronate reaction, serious liver damage is not present.

Amebiasis.—Ellenberg reviews observations on 176 unselected cases of proved amebiasis, of which 107 were symptomatic and 69 were asymptomatic. All these patients were subjected to sigmoidoscopy. It was found that the basic pathologic pattern is identical in symptomatic and in asymptomatic cases of Endameba histolytica infection and that the secondary invasion of the amebic ulcerations by bacterial pathogens is a decisive determinant in the symptomatology of amebiasis. More than nine tenths of the cases having amebic lesions with an accompanying inflammatory component showed distinct clearing of the inflammation after the use of sulfadiazine. Specific amebic lesions showed no response to sulfadiazine. The beneficial effects of sulfadiazine were not related to any action on E. histolytica.

American Journal of Medicine, New York

1:451-582 (Nov.) 1946

*Levels of Blood Pressure in Both Arms and Legs in Normal Subjects and Patients Suffering from Certain Diseases. H. J. Stewart, A. A. Newman and W. F. Evans.—p. 451.

Relative Importance of Certain Variables in Clinical Determination of Blood Pressure. C. E. Kossmann.—p. 464.

*Concentration of Renin in Renal Venous Blood in Patients with Chronic Heart Failure. A. J. Merrill, J. L. Morrison and E. S. Brannon.—p. 468.

*Relief of Pellagrous Glossitis with Synthetic Folic Acid. T. D. Spies.—p. 473.

Results from Subtotal Gastric Resection in Peptic Ulcer: Internist's Viewpoint. T. G. Miller and J. T. L. Nicholson.—p. 476.

Nisulfazole Treatment of Chronic Ulcerative Colitis. R. H. Major.—p. 485.

Role of Hyaluronidase in Human Infertility. R. Kurzrok, S. L. Leonard and Helen Conrad.—p. 491.

Blood Pressure in Arms and Legs.—Stewart and his associates report observations on the blood pressures recorded in all four extremities in 21 healthy persons and 102 patients with various cardiac lesions. The systolic and diastolic blood pressures were higher in the legs than in the arms in normal subjects, in those with hypertension, in patients with rheumatic heart disease with mitral stenosis and mitral insufficiency, in patients with congenital heart disease (exclusive of coarctation of the aorta) and in patients with hyperthyroidism. Higher systolic and diastolic blood pressures were obtained in the arm than in the thigh in 23 cases of coarctation of the aorta, a reversal of the situation encountered in normal subjects and in patients with the diseases mentioned, indicating the diagnostic importance of this finding for coarctation.

Renin in Cardiac Failure.—Merrill and his collaborators obtained renal venous blood from 5 normal subjects and 11 patients with fixed chronic congestive failure. No renin was detected in the renal venous blood or arterial blood of the normal subjects. Significant amounts of renin were found in the renal venous blood of 8 of the 11 patients with chronic heart failure. No renin was detected in the arterial blood. The finding of increased concentration of renin in the renal venous blood of patients with chronic congestive failure affords an interesting explanation for hitherto obscure vasoconstriction phenomena occurring in association with congestive failure.

Folic Acid in Pellagrous Glossitis.—Spies found that folic acid alleviated both macrocytic anemia and glossitis in patients with pellagra, whereas liver extract influenced only the macrocytic anemia, and nicotinic acid ameliorated the glossitis alone.

American J. Obstetrics and Gynecology, St. Louis

52:707-880 (Nov.) 1946. Partial Index

*Conservative Surgery in Endometriosis. C. T. Beecham.—p. 707.
*Treatment of Prolonged Labor with Posterior Pituitary Extract. D. E. Reid.—p. 719.
Electrical Potentials of Human Uterus in Labor. L. V. Dill and R. M. Maiden.—p. 735.
Fourth Stage of Labor: Account of Physiology and Clinical Aspects of Postpartum Uterus During First Postplacental Hour. E. M. Greenberg.—p. 746.
*Pathologic Findings in Genital Bleeding Two or More Years After Spontaneous Cessation of Menstruation. D. B. Cheek and J. E. Davis. —p. 756.
Late Postpartum Eclampsia. H. J. Stander, R. W. Bonsnes and W. B. Stromme.—p. 765.
Selection of Forceps for Midpelvic Arrest of Vertex. L. Langman and H. C. Taylor Jr.—p. 773.
Composition of Human Placenta: III. Vitamin Content. J. P. Pratt, Charlotte Roderuck, Margaret Coryell and Icie G. Macy.—p. 783.
Present Status of Transfusion of Whole Blood and Its Derivatives in Obstetrics and Gynecology. L. H. Tisdall.—p. 788.
Antepartum Prediction of Hemolytic Disease of Newborn. E. W. Page, Marjorie Hunt and S. P. Lucia.—p. 794.
Diagnostic Technic for Detection of Enterocele. E. G. Waters.—p. 810.
Sulfonamides as Prophylactic Agent in Conjunction with Cesarean Section. H. C. Hesseltine and Christine Thelen.—p. 813.
Prolapse of Umbilical Cord. S. B. Gusberg.—p. 826
Treatment of Acute Postpartum Thrombophlebitis of Lower Extremity by Continuous Caudal Anesthesia. R. C. Benson.—p. 830.
Cystic Adenomyosis of Uterus. S. Gold and P. J. Kearns.—p. 840.
Solid Teratomas of Ovary with Neurologic Metastases. G. G. Proskauer. —p. 845.

Conservative Surgery in Endometriosis.—Beecham reviews observations in 80 consecutive cases of endometriosis. There seems to be a close relationship between retrodisplacement and endometriosis. The nonpathologic retrodisplaced uterus should be observed at regular intervals for signs of fixation indicating a surgical need for treatment of probable endometriosis. The author has found it possible to salvage ovarian tissue in situ in 23 per cent of women under 45 years of age. Childbearing capacity was salvaged in an additional 52.5 per cent of women under 45 years of age. The author feels that conservative surgery is worth while and should be the major consideration when operating for endometriosis.

Posterior Pituitary Injection in Prolonged Labor.—According to Reid, prolonged labor dependent on uterine inertia and associated with cervical dystocia occurs mostly in primiparous women. Posterior pituitary injection has been administered to 1,609 patients with uterine inertia during labor. With the use of this drug there have been no cases of ruptured uterus or extensive birth canal trauma. The incidence of prolonged labor has been reduced to the low figure of 2 per cent in the clinic patients. The need for midforceps operations was reduced to 0.5 per cent. The need for Dührssens' incisions was small. The author feels that posterior pituitary injection can be administered safely during labor. Its use has decreased the incidence of prolonged labor without deleterious effects on mother or baby.

Pathologic Findings in Genital Bleeding Two or More Years After Cessation of Menstruation.—Of the 514 cases reviewed by Cheek and Davis there were malignant lesions in 36.1 per cent. This is a lower figure than that usually quoted and reflects increasing understanding on the part of the patient of the danger of postmenopausal bleeding, better understanding and cooperation on the part of attending physicians in referring patients for study, and possibly a greater incidence of benign bleeding from endocrine stimulation. Type of bleeding varies from spotting to profuse hemorrhage and has no significance in determining the etiology. Bleeding after the menopause may come from anywhere in the genital tract. To rule out cancer a complete study, including uterine curettage and biopsy of the cervix, is imperative in all cases regardless of the results of pelvic examination.

American Journal of Physiology, Baltimore

147:433-602 (Nov.) 1946. Partial Index

Changes in Blood Acid-Base Balance During Asphyxia and Resuscitation. F. S. Grodins, A. Lein and H. F. Adler.—p. 433.
Effects of Hemorrhage on Tissue Metabolites. G. A. LePage.—p. 446.
Metabolism of Histamine and Adenylic Compounds in Embryo. G. A. Misrahy.—p. 462.
Influence of Steroids on Restoration of Hypertension in Hypophysectomized Rats. E. W. Page, E. Ogdena and Evelyn Anderson.—p. 471.
Electrocardiogram of Rats on Vitamin E Deficiency. C. R. Ensor. —p. 477.
Simultaneous Transport of T-1824 and Radioactive Red Cells Through Heart and Lungs. P. Dow, P. F. Hahn and W. F. Hamilton.—p. 493.
Further Observations on Distribution at Level of Pons of Descending Nerve Fibers Subserving Heat Regulating Functions. A. D. Keller and J. R. Blair.—p. 500.
Effect of Various Ions on Anaerobic Glycolysis of Rat Liver in Vitro. C. O. Warren and F. G. Ebaugh Jr.—p. 509.
Validity of Internal Jugular Venous Blood in Studies of Cerebral Metabolism and Blood Flow in Man. E. B. Ferris, G. L. Engel, C. D. Stevens and Myrtle Logan.—p. 517.
Relationship of Parathyroid Glands to Action of Estrogen on Bone. B. L. Baker and J. H. Leek.—p. 522.
Tolerance of Adult Chickens to Hypothermia. P. D. Sturkie.—p. 531.
Relation of Renal Blood Flow to Effective Arterial Pressure in Intact Kidney of Dog. E. E. Selkurt.—p. 537.
Nerve Degeneration and Regeneration. J. Erlanger and G. M. Schoepfle. —p. 550.
Relative Potency of Certain Synthetic Estrogens When Administered Orally to Chicks. S. S. Munro and I. L. Kosin.—p. 582.

Am. J. Syphilis, Gonorrhea and Ven. Dis., St. Louis

30:513-634 (Nov.) 1946

*Asymptomatic Neurosyphilis: Prognosis. R. D. Hahn and E. G. Clark, with assistance of A. Felsóvanyi, M. Keisselbach, H. Koteen and R. Potter.—p. 513.
Relative Toxicity and Therapeutic Activity in Experimental Syphilis of Bismuth Subsalicylate, Bismosol and Biliposol. H. Eagle.—p. 549.
Electrophoretic Analysis of Syphilitic, Biologic False Positive and Normal Human Sera. G. R. Cooper, H. W. Craig and J. W. Beard.—p. 555.
Experimental Syphilis: Qualitative and Quantitative Studies of Reagin in Normal and Syphilitic Rabbits. N. P. Sherwood and Carolyn Collins.—p. 571.
Effect of Streptomycin on Experimental Syphilis Infection of Rabbits. R. A. Fisken and O. M. Gruhzit.—p. 581.
*Penicillin in Treatment of Gonococcal Infections: Analysis of Results Reported in Literature Through 1945. M. Meads and M. Finland. —p. 586.

Prognosis of Asymptomatic Neurosyphilis.—Hahn and Clark reviewed the records of 1,800 patients who were diagnosed as having asymptomatic neurosyphilis. Two groups of these patients were selected for study as a random sample; the first group was made up of 533 patients with at least two spinal fluid observations and the second group of 467 patients with at least two physical examinations. The observation period was less than two years in approximately 40 per cent and more than five years in approximately 35 per cent of these patients. Race and sex proved to be of slight importance in the prognosis of asymptomatic neurosyphilis. The younger the patient and the more recent the syphilitic infection, the more favorable is the prognosis during the first ten years of observation, but the elapsed time between the acquisition of syphilitic infection and termination of observation has been insufficient in the younger patients for determination of ultimate prognosis. The more strongly positive the initial spinal fluid examination, the less favorable is the prognosis in asymptomatic neurosyphilis. Spinal fluid improvement is a relative but not an absolute guaranty against clinical progression, and spinal fluid progression, in particular, is a grave prognostic sign with respect to the development of clinical neurosyphilis. The prognosis in many patients with asymptomatic neurosyphilis is favorable even when treatment is totally inadequate. Adequate amounts of routine therapy with trivalent arsenical and bismuth compounds are of distinct value in the treatment of many patients with asymptomatic neurosyphilis. No evidence could be found that the addition of tryparsamide was of value in the treatment of asymptomatic neurosyphilis. Fever therapy is the most effective form of treatment in asymptomatic neurosyphilis, as demonstrated by its value in the most resistant patients.

Penicillin in Treatment of Gonococcic Infections.—Meads and Finland present a critical analysis of the results of treatment with penicillin in 21,936 cases of acute gonorrhea collected from the literature to the end of 1945. Gross cure rates of between 92 and 95 per cent were obtained from the initial course of parenteral penicillin given in the most commonly used doses of between 75,000 and 200,000 units, and these rates were not definitely related to the size of the dose within this range. Within the same dose range, however, there were fairly wide variations in cure rates reported by different observers. A dose of less than 75,000 units gave significantly lower cure rates, except perhaps when penicillin X was used. There were also lower cure rates with an initial course of 200,000 units or more, but this was probably related to the choice of cases. Chronicity and the presence of focal purulent complications are probably the most common causes of failure, but the possibility of penicillin-resistant strains and low potency or rapid deterioration of some lots of penicillin was considered.

Annals of Surgery, Philadelphia

124:799-990 (Nov.) 1946

Pyruvic Acid Method in Deep Clinical Burns. G. J. Connor and S. C. Harvey.—p. 799.
*Anemia of Thermal Burns. F. D. Moore, W. C. Peacock, Elizabeth Blakely and O. Cope.—p. 811.
Ascorbic Acid, Riboflavin, Thiamine and Nicotinic Acid in Relation to Severe Injury, Hemorrhage and Infection in Humans. S. M. Levenson, R. W. Green, F. H. L. Taylor and others.—p. 840.
*Treatment of Acute Renal Failure by Peritoneal Irrigation. J. Fine, H. A. Frank and A. M. Seligman.—p. 857.
*Surgical Treatment of Congenital Pulmonic Stenosis. A. Blalock. —p. 879.
Arterial Repair in Treatment of Aneurysms and Arteriovenous Fistulae: Report of Eighteen Successful Restorations. N. E. Freeman.—p. 888.
Roentgenologic Kymographic Studies of Heart in Presence of Arteriovenous Fistula and Their Interpretation. E. Holman.—p. 920.
Arteriovenous Aneurysm of Vertebral Vessels: Report of 10 Cases. D. C. Elkin and M. H. Harris.—p. 934.
Studies on Use of Gelatin Sponge or Foam as Hemostatic Agent in Experimental Liver Resections and Injuries to Large Veins. H. P. Jenkins and R. Janda.—p. 952.
*Penicillin in Treatment of Established Surgical Infections: Systematic Study of 744 Including 82 Septicemias. F. L. Meleney.—p. 962.
Clinicians' Responsibility in Teaching of Surgery. A. O. Singleton. —p. 981.

The Anemia of Thermal Burns.—The stubborn and disabling character of the anemia following severe burns has prompted Moore and his associates to determine among other factors how far the customary methods of measuring an anemia suffice for the guidance of therapy and to what extent newer methods of blood volume determinations must be introduced as a clinical routine. Anemia in burned patients has been investigated by serial studies of the red cell mass and bone marrow activity employing a radioactive isotope of iron and by measurements of pigment excretion. True reductions in red cell mass must be distinguished from the false anemia of hemodilution encountered early in the course. Multiple influences including hemolysis, cryptic wound hemorrhage, iron deviation, gastrointestinal absorption, infection and marrow depression enter into the etiology of the anemia. Its anticipation and early replacement is far preferable to late recognition and delayed transfusion. There is no adequate substitute in the clinical care of a severely burned patient for serial objective measurements of the red cell volume.

Peritoneal Irrigation in Acute Renal Failure.—Fine and his associates demonstrate that certain types of acute renal failure need not be fatal if the period necessary for repair can be provided by utilizing an extrarenal pathway as a temporary substitute for the normal excretory function of the kidney. They show that continuous peritoneal irrigation with an appropriate fluid is a satisfactory method of eliminating uremia. It can be used in any case of acute renal failure in which death from uremia is likely and in which recovery of kidney function is considered possible. The control of fluid and electrolyte balance is at least as important as the elimination of nitrogenous waste products and is an integral part of this therapeutic method.

Surgical Treatment of Congenital Pulmonic Stenosis.—The main indication for operation in congenital pulmonic stenosis according to Blalock is evidence of an inadequate flow of blood to the lungs. The absence of visible pulsations in the lung fields, as observed under the fluoroscope, and roentgenographic evidence that the pulmonary artery is small are important in the diagnosis. Whereas the typical case of the "tetralogy of Fallot" is easily diagnosed, there are many borderline cases which are not. If the patient has a hopeless prognosis without an operation, Taussig and the author have taken the position that an exploration is indicated. If doubt still exists after the pulmonary artery is exposed, the pressure in the artery is measured by using a needle and a water manometer. When the pressure is greater than 300 mm. of water an anastomosis is probably inadvisable. Operation has been performed on 110 patients. This figure includes all patients on whom an incision was made and hence some in whom an anastomosis was not performed. A total of 25 patients have died, making a mortality rate of 23 per cent. All the patients with 1 exception who have survived the performance of an anastomosis are improved. A number of the children who could walk only a few feet prior to the operation can now walk a mile or more. Some engage in fairly strenuous exercise.

Penicillin in Established Surgical Infections.—Meleney reviews the results obtained with penicillin in surgical infections under the direction of the Committee on Chemotherapy of the National Research Council. There were 744 cases with sufficiently complete data. Penicillin controls the disease either alone or as an aid to surgery in about two thirds of surgical infections. It is most effective in cases of furuncle, cellulitis, mastoiditis, carbuncle, suppurative arthritis, lung abscess, superficial abscess, brain abscess and osteomyelitis. It is moderately successful in cases of deep abscess, thrombophlebitis, sinusitis, infected soft part wounds, infected operative wounds, otitis media, infected compound fractures and ulcer of the skin. It is not so successful in cases of empyema, infected burns, gas gangrene, actinomycosis, gangrene of the skin, miscellaneous surgical infections, postoperative pneumonia, peritoneal abscess and diffuse peritonitis. It is more successful in the treatment of acute than of chronic infections and if given early rather than late. It is often effective when the sulfonamides have failed. Many localized surgical infections can be successfully treated with local injection of penicillin solution or local application of penicillin in ointment form. "Adequate dosage" may vary from a few thousand to several million units. Penicillin is not as successful in mixed infections as in those caused by a pure culture of a susceptible organism. Clostridium welchi is so often found in a mixed culture with other intestinal organisms that clinical cases of gas gangrene often fail to respond to penicillin. An analysis of the cases in which penicillin had no appreciable effect revealed that in a large proportion of these cases the cultures showed organisms capable of producing penicillinase. Other important causes of failure were resistant strains of staphylococci or streptococci, too little or too late administration of penicillin, associated tuberculosis or diabetes with arteriosclerosis and too conservative surgery. In the septicemia cases the results were better in those due to the hemolytic streptococcus than in those due to the staphylococcus, probably because in the latter type the infection more quickly produces deep metastatic abscesses and vegetation on the heart valves. Four points warrant special emphasis: 1. Penicillin is a valuable adjunct to surgery in surgical infections, and in many instances it can obviate surgery, but it is not a panacea. 2. Local application of penicillin is effective in localized surgical infections if the organisms are susceptible. 3. "Adequate dosage" is the amount which will bring the infection under control and it cannot be determined before the beginning of treatment. 4. A careful and complete bacteriologic analysis is essential to obtain the best results.

Kansas Medical Society Journal, Topeka

47:493-552 (Nov.) 1946

Treatment of Benign Menopausal Bleeding. J. R. Willson.—p. 493.
Public Health Aspects of Cancer Control. E. G. Brown.—p. 496.
*Riedel's Lobe of Liver—Report of Case. H. F. Gloyne.—p. 505.

Riedel's Lobe of Liver.—Gloyne defines Riedel's lobe of the liver as a linguiform lobulation or tonguelike prolongation of the anterior margin of the right lobe of the liver. The presence of this lobe has been ascribed to gallstones with enlarged gallbladder, tight lacing in corsets, syphilitic perihepatitis with scarring of the liver and partial or local ptosis of the liver. The condition is rarely seen today. The author observed it in a woman aged 63, confirming the difficulty that may be experienced in preoperative diagnosis. Surgery may be indicated to establish the diagnosis and eliminate the possibility of retroperitoneal cancer or pathologic change of the right kidney or right colon. Cholecystectomy is in order if the gallbladder is diseased and/or pain is a prominent symptom.

Maine Medical Association Journal, Portland

37:275-302 (Nov.) 1946

One Hundred Cases of Esophageal Diseases. G. O. Cummings.—p. 275.
Penicillin Treatment in Pregnant Woman with Early Syphilis. A. H. Scolten.—p. 288.

Medical Annals of District of Columbia, Washington

15:473-524 (Oct.) 1946

Recent Advances in Ophthalmology. B. Rones.—p. 473.
Benadryl: Preliminary Report on Its Use in 39 Patients. L. S. Blumenthal and M. H. Rosenberg.—p. 478.
Available Antibiotic Preparations and Their Toxicity. L. E. Putnam. —p. 482.
Penicillin Therapy in Neurology and Psychiatry. E. R. Reiner and G. D. Weickhardt.—p. 488.

15:525-578 (Nov.) 1946

Questions of Current Interest in Swedish Medical World. E. Jorpes and W. Kock.—p. 525.
Removal of Superfluous Hair by Monopolar Coagulation. M. M. Robinson.—p. 531.
District of Columbia Medical Society Ragweed Pollen Count. Eloise W. Lailin.—p. 537.
Clinical Evaluation of Liver Disease, with Special Reference to Portal Cirrhosis. R. L. Wells.—p. 540.
Contraceptive Diaphragm: Improved Technic. A. H. Gerber.—p. 546.

New England Journal of Medicine, Boston

235:699-736 (Nov. 14) 1946

*Effect of Anticoagulants on Penicillin Therapy and Pathologic Lesion of Subacute Bacterial Endocarditis. W. S. Priest, J. M. Smith and C. J. McGee.—p. 699.
Foreign Bodies in Respiratory Tract. J. R. Richardson.—p. 707.
Diseases of Thyroid Gland. S. L. Gargill and M. F. Lesses.—p. 717.
Dermoid Cyst of Left Ovary, with Twisted Pedicle.—p. 728.
Syphilitic Aortitis, with Multiple Fusiform and Saccular Aneurysms of Thoracic Aorta.—p. 730.

Effect of Anticoagulants on Penicillin Therapy in Endocarditis.—Thirty-four consecutive and unselected patients with subacute bacterial endocarditis were treated with penicillin by Priest and his associates. Fifteen received anticoagulants and 19 did not. Anticoagulants failed to prevent major embolism in 5. If the daily dose of penicillin is adequate and treatment is continued long enough, healing of the vegetations will take place as well without as with anticoagulants. The rate of recovery was 100 per cent in the latest 15 consecutive patients, most of whom daily received 1,000,000 units or more. All these patients were treated without anticoagulants. Fatal hemorrhage resulting from the use of anticoagulants was suggested, although not proved, in 2 of them. The additional cost, which is large when heparin is used, as well as the expense and inconvenience to the patient of daily determinations of coagulation or prothrombin time, does not seem justified.

New Jersey Medical Society Journal, Trenton

43:447-484 (Nov.) 1946

Relapsing Tropical Diseases and Their Treatment. E. A. Lawrence. —p. 450.
Traumatic Intracranial Aneurysm with Pulsating Exophthalmos. O. R. Holters, J. A. Fisher and J. A. Fisher Jr.—p. 456.
*Heartburn in Pregnancy. D. B. Roth.—p. 458.
Pantopaque Myelography: Indications and Technic. B. Copleman.—p. 460.

Heartburn in Pregnancy.—According to Roth heartburn is a common complaint in the last trimester of pregnancy. It is due to the regurgitation of gastric contents. Many women experience it only in a recumbent position, and in some the symptoms are severe enough to interfere with sleep. The most effective treatment is the administration of the cholinergic drug neostigmine, the use of thiamine hydrochloride and nicotinic acid, and dietary management. Considering the evident benefit from neostigmine and vitamin B, further trial of these agents is definitely indicated.

New York State Journal of Medicine, New York

46:2463-2574 (Nov. 15) 1946

Action of Drugs and Various Chemical Agents on Gastric Mucosa and Gastric Function in Man. S. Wolf and H. G. Wolff.—p. 2509.
Advantages of True Venous Blood Sugar Values for Glucose Tolerance Test. H. O. Mosenthal and Eileen Barry.—p. 2513.
*Dietary Treatment of Laënnec's Cirrhosis. A. J. Patek.—p. 2519.
Curare in Poor Anesthetic Risk Patient. I. M. Pallin.—p. 2523.
Attempts to Adapt a Human Strain of Poliomyelitis Virus from Man to Rodents. C. W. Jungeblut.—p. 2530.

Dietary Treatment of Laënnec's Cirrhosis.—Patek says that during a period of nine and a half years 150 patients with cirrhosis of the liver were treated at the Coldwater Memorial Hospital. He reviews observations on the 124 patients who were in the decompensated stage and had either ascites or jaundice. In contrast to the traditional American diet for liver disease, which is high in carbohydrate and low in protein and fat, the present diet is rich in protein and ample in carbohydrate and fat. It consists chiefly of meat, milk, eggs, fruit and green vegetables. Meat is served twice daily, milk five times daily—three times with meals, and twice with 25 Gm. of powdered brewers' yeast. In patients with ascites, fluids are allowed up to 2,000 cc. daily and salt is moderately restricted. Fifty-one of the 124 patients showed signs of clinical improvement, as was indicated by gain in weight, disappearance of ascites, edema and jaundice and changes toward normal values in liver function tests.

Public Health Reports, Washington, D. C.

61:1641-1676 (Nov. 15) 1946

*Preparation of Mumps Vaccines and Immunization of Monkeys Against Experimental Mumps Infection. K. Habel.—p. 1655.
Sickness Absenteeism Among Industrial Workers, First Quarter of 1946. W. M. Gafafer.—p. 1664.

Mumps Vaccines.—According to Habel, mumps vaccines have been prepared from infected chick embryo yolk sacs and allantoic fluid. Concentration and clarification of the antigens have been accomplished by ether extraction, by precipitation of urates and by precipitation through *p*H change. Virus has been inactivated by exposure to ether and to ultraviolet radiation. Immunity to mumps in monkeys following immunization with these vaccines was demonstrated by the absence of parotid swelling following test virus inoculation and by the antibody response to vaccine. Vaccine antigen mixed with beeswax in oil as an adjuvant appeared to be superior to saline suspensions in producing immunity.

Tennessee State Medical Assn. Journal, Nashville

39:397-432 (Nov.) 1946

Public Relations. Olin West.—p. 397.
*Carcinoma of Rectum and Rectosigmoid. G. T. Howard Jr.—p. 399.
Bronchoscopy: Its Indications and Value—Review of 425 Consecutive Cases. D. H. Waterman.—p. 406.

Carcinoma of Rectum and Rectosigmoid.—Howard thinks that the one stage abdominoperineal resection offers the best chance of a cure in cases of carcinoma of the rectum and rectosigmoid and should be done whenever possible. The diagnosis of this disease is not a difficult one when the possibility of its presence is kept in mind. The importance of a biopsy in every case is stressed.

Virginia Medical Monthly, Richmond

73:489-536 (Nov.) 1946

Physician's Responsibility to His Community. J. L. Rawls.—p. 489.
Choice of Anesthetic and Avoiding Complications. C. Y. Fordyce. —p. 494.
*Treatment of Vincent's Angina with Penicillin. S. G. Page Jr. and B. L. Lipman.—p. 499.
Traumatic Perforation of Ear Drums. G. S. Fitz-Hugh.—p. 504.
Poliomyelitis. H. Robertson.—p. 506.
Critical Review of Fifty Cases of Urticaria. S. Dratler.—p. 510.
Blast Concussion—Observations Re Handling. L. A. Eigen.—p. 517.

Penicillin in Vincent's Angina.—Page and Lipman treated 23 patients with Vincent's angina by means of penicillin in the form of pastilles or lozenges without a relapse. The lozenges produced symptomatic relief in from twelve to forty-eight hours. The authors conclude that penicillin in the form of lozenges is well suited to the ambulatory treatment of Vincent's angina.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

19:481-520 (Dec.) 1946

Applications of Recent Advances in Nuclear Physics to Medicine. J. S. Mitchell.—p. 481.
Exploration of X-Ray Dose Distribution: An Automatic Method. L. A. W. Kemp.—p. 488.
Investigations with Morgan Photoelectric Exposure Timer. C. E. Eddy.—p. 502.
*Pneumonoconiosis in Dockers Dealing with Grain and Seeds. L. Dunner, R. Hermon and D. J. T. Bagnall.—p. 506.
Transitory Pulmonary Infiltrations and Apical Cavitation Associated with Eosinophilia. A. Elkeles and N. R. Butler.—p. 512.
Fate of Accessory Ossicle. P. P. Hauch.—p. 518.

Pneumonoconiosis in Dock Workers.—Dunner and his associates observed 55 dock workers who for years had been handling cargoes of grains, seeds and certain chemical materials such as bauxite, iron ore, sulfur and manganese. These workers are exposed to large amounts of dust. The analyses of cereal dusts have disclosed the presence of appreciable amounts of silica, fine hairs, starch grains and cellular matter. These substances may produce lung disease. Of 55 grain workers 11 had pneumonoconiosis.

British Journal of Urology, London

18:105-164 (Sept.) 1946

Rare Type of Rupture of Bulbous Urethra. M. Paul.—p. 133.
Trauma to Pelvic Girdle and the Urethra and Its Treatment. R. A. Santaella.—p. 135.
Crossed Unilateral Renal Ectopia with Cystine Calculus. J. D. Fergusson.—p. 138.
Completely Calcified Tuberculous Kidney. J. Gabe.—p. 140.

British Medical Journal, London

2:723-760 (Nov. 16) 1946

*Pure Penicillin in Ophthalmology. A. Sorsby and J. Ungar.—p. 723.
*Penicillin in Treatment of Acute Puerperal Mastitis. Mary D. Taylor and S. Way.—p. 731.
*Use of Benadryl for Penicillin Urticaria: Preliminary Report. R. R. Willcox.—p. 732.
Congenital Patency of Foramen Ovale Cordis, with Sudden Death During Exercise Tolerance Test. C. E. Lumsden.—p. 734.
Cough Syrup. E. M. Boyd.—p. 735.

Pure Penicillin in Ophthalmology.—Sorsby and Ungar point out that until recently supplies of penicillin contained some 80 to 90 per cent of impurities. In contrast, most of the samples now obtainable contain a concentration of penicillin of up to 80 per cent, and limited quantities of pure penicillin are becoming available. Pure penicillin is well tolerated by the eye when applied locally in ointments containing up to 100,000 units per gram or in watery solutions. Intravitreal injection of pure penicillin, though not free from secondary effects, is also well tolerated. Repeated subconjunctival injections of 50,000 units in 0.5 cc. of water are well tolerated. Experimental infections of the anterior chamber are readily controlled by the use of concentrated ointments, subconjunctival injections and systemic administration of penicillin. In vitreous infections subconjunctival injection is the only procedure that was found satisfactory.

Penicillin in Acute Puerperal Mastitis.—Taylor and Way think that adequate control of acute puerperal mastitis can be obtained only by the systemic administration of large doses of penicillin. They administer it by three hourly intramuscular injections of 12,000 to 20,000 Oxford units. Criteria for starting treatment are pyrexia, associated with flushing, and hardening of the breast. The authors report 10 cases. Discomfort was never present for more than three days, and no baby became infected as a result of the continued suckling. There were no recurrences after the cessation of treatment. Owing to the ineffectiveness of sulfonamide therapy in this disease, it should be entirely replaced by penicillin.

Benadryl for Penicillin Urticaria.—Willcox describes the action of benadryl in 6 cases of urticaria, 5 of which were considered to be due to intramuscular penicillin therapy. The doses ranged from 150 to 450 mg. in each case. A reaction was noted in 1 case in which epinephrine was administered concurrently. The results obtained showed success in 5 cases and failure in 1. In 2 of the successful cases there were relapses, in 1 of which further treatment with the drug led to a satisfactory result.

Edinburgh Medical Journal

53:529-592 (Oct.) 1946

*Spread of Infective Hepatitis and Poliomyelitis in Egypt. C. E. Van Rooyen and G. R. Kirk.—p. 529.
Some Aspects of Plastic Surgery Unit. A. B. Wallace.—p. 544.
Observations on Treatment of Fractures of Femur. E. A. Jack.—p. 555.
Dietary Survey of Pregnant Women and School Children in Edinburgh. M. H. Roscoe and H. S. McKay.—p. 565.
Carbohydrate Metabolism in Obesity. Z. Godlowski.—p. 574.
Pulmonary Mycosis. T. G. Brown.—p. 583.

Spread of Infective Hepatitis and Poliomyelitis.—Van Rooyen and Kirk think that both infective hepatitis and poliomyelitis are primarily intestinal maladies. The carrier as well as the immunity rates at the time of an epidemic have never been accurately surveyed for lack of convenient methods. Susceptible individuals who ingest infective hepatitis virus develop the secondary complication of jaundice more frequently than do those who develop secondary paralytic phenomena after ingestion of poliomyelitis virus. The authors interpret the epidemiologic behavior of infective hepatitis in the light of the discovery of the causal virus in human stools. Reference has been made to the spread of infection under conditions in which British troops served in the Middle East Force.

Journal of Laryngology and Otology, London

61:221-260 (April) 1946

Suggested Method for Measuring Attentuation of Sound by Flying Helmets. E. D. D. Dickson, D. B. Fry, G. E. Swindell and R. E. C. Brown.—p. 221.
Considerations Regarding the Secondary After-Sensations Caused by Stimulation of Semicircular Canal System. L. B. W. Jongkees and J. J. Groen.—p. 241.
*Urea: Useful Agent in Treatment of Suppurative Conditions of External Auditory Meatus and Nasal Vestibule. J. L. D. Williams.—p. 251.

Urea in Treatment of Suppurations of External Auditory Meatus.—According to Williams, urea has been tried in aural furunculosis and has quickly established itself as the treatment of choice in any but the mildest cases. The meatus is first mopped out with wool. Urea is then introduced on a gauze wick, dry for preference. It is sometimes difficult to get much urea to adhere to the dressing by this method alone. An alternative is to use narrow petrolatum gauze, the urea adhering more readily to it and the introduction of the dressing being less disagreeable, since the petrolatum acts as a lubricant. However, the urea is more efficacious in its "drawing" power if used dry, especially if the furuncles have begun to discharge. The dressings are repeated daily, preceded by careful toilet. Once the swelling has subsided and the furuncles have ceased discharging, it is advisable to discontinue the use of urea.

Lancet, London

2:703-738 (Nov. 16) 1946

*Observations on Psychology of Tuberculous. G. Day.—p. 703.
Poliomyelitis Epidemic in Mauritius in 1945. E. I. B. Hawes and J. R. Raffray.—p. 707.
Penicillin for Gonorrhea in the Female. W. N. Mascall.—p. 712.
Epidemic Keratoconjunctivitis in Bengal: Incubation Period. B. T. Thorne.—p. 715.
*Fetal Bones in Urinary Bladder: Unusual Termination to Ectopic Pregnancy. H. W. Forshaw.—p. 716.

Psychology of the Tuberculous.—Observations in a sanatorium for tuberculous patients convinced Day that patients who develop pulmonary tuberculosis in the absence of environmental causes often do so because of disease in their psychologic environment—their relation to themselves or to the world outside. In psychologic distress the patient is ready to be ill and the ubiquitous bacilli are there ready to oblige. This is tantamount to saying that tuberculosis provides means for a flight from frustration, for self punishment and all those other dark urges which are continually shipwrecking one's behavior. If such a patient is to recover from his tuberculosis we must treat his concurrent psychologic disease. Retreat in a sanatorium probably brings about changes in many patients, but it is likely that psychiatric aid would expedite their readjustment.

Fetal Bones in Urinary Bladder from Ectopic Pregnancy.—Forshaw reports that a woman from the African bush had passed small bones in the urine on several occasions On the basis of the history and the clinical findings a tentative diagnosis was made of an old ruptured ectopic pregnancy which had ulcerated through into the bladder A suprapubic incision revealed dense adhesions between the uterus and the proximal portion of the left broad ligament and the bladder After the peritoneal cavity was closed the bladder was opened and fetal bones were found The patient made an uneventful recovery

Medical Journal of Australia, Sydney

2:577-612 (Oct 26) 1946

Care of Paralyses of Poliomyelitis Jean Macnamara —p 577
Special Characteristics and Requirements of Orthopedic Surgery in Industrial Patients L G Teece —p 580
*Sudeck s Atrophy H A Sweetapple —p 581
Perthes's Disease and Its Occurrence as Familial Condition E McComas —p 584
Hallux Valgus and Hallux Rigidus D J Glissan —p 585
Amputations F H McClements Callow and B T Keon Cohen and J M J Jens —p 588
*Lesions of Musculotendinous Cuff of Shoulder N S Gunning —p 593
*Gramophone Recordings of Cardiovascular and Respiratory Sounds E H Stokes —p 595
Recording of Cardiovascular and Respiratory Sounds V M Brooker —p 595

Sudeck's Atrophy —Sweetapple says that Sudeck's atrophy usually occurs in the hand or foot It results from minor trauma and leads to pain, joint stiffness, vasomotor changes and bone atrophy out of all proportion to the causative injury The author points out that there is agreement about interrupting either the afferent or the efferent nervous connections with the injured part but that a diversity of opinion exists in the methods of doing it

Lesions of Musculotendinous Cuff of Shoulder.—Gunning stresses the importance of the subacromial structures in relation to painful shoulders, which are often diagnosed as strain muscular rheumatism, neuritis or arthritis In relation to the lesions of the musculotendinous cuff and painful shoulder he discusses bursitis, strain of the musculotendinous cuff, supraspinatus tendinitis or tendinitis of the musculotendinous cuff, partial rupture of the musculotendinous cuff complete rupture of the musculotendinous cuff, calcification in the supraspinatus tendon and frozen or silent shoulder

Recordings of Cardiovascular and Respiratory Sounds —Stokes says that one of the difficulties in the demonstration of auscultatory findings lies in the fact that patients with characteristic signs are frequently not available when required Vascular and respiratory sounds have therefore been recorded on disks, which can be played repeatedly These records are to assist, not to replace, clinical study

Tubercle, London

27:173 194 (Nov) 1946

Atelectatic Bronchiectasis of Right Middle Lobe A T Doig —p 173
The Sputum Positive Case in the Home S Hall —p 191

27.195-216 (Dec) 1946

*Intracutaneous Injection of Vole Tubercle Bacilli in Tuberculous Persons C Cameron and Isabella A Purdie —p 195
Extrapleural Space in Thoracoplasty A J Coello —p 202
Tuberculosis and Employment N England —p 207

Injection of Vole Tubercle Bacilli in Tuberculous Persons —Cameron and Purdie report several series of experiments which proved that injection of vole tubercle bacilli, living or dead, into tuberculin positive human beings causes a modified Koch s phenomenon The work confirms that antigenically the vole organism is similar to the human and bovine tubercle bacillus The close correspondence of the degree of reaction to its injections with the grade of Mantoux reaction and the comparatively small difference between the effects of the living and dead organism prove that the reactions are largely allergic The authors admit that one cannot argue from infected to noninfected people, but the similarity of the results of injection of the former group with the vole tubercle bacillus and with BCG is apparent If future work should show that the vole bacillus has the same low pathogenicity for man as it has for the rabbit, the calf and the guinea pig its fixity of type gives it obvious advantages over BCG for human immunizing purposes

Journal de Médecine de Lyon

27:673-710 (Oct 5) 1946

Case of Chloroma M Bernheim, M Jeune, P Grenot and J Aulong —p 673
Some Clinical Aspects of Hemorrhagic Tracheitis Lageze, Mounier Kuhn, Cahen and Ollagnier —p 681
*Diphtheritic Coryza in Suckling Infants Two Recent Epidemics J P Robin and H Brunel —p 689

Diphtheritic Coryza —Robin and Brunel report 2 epidemics of diphtheritic coryza which occurred in a maternity ward Twenty-six suckling infants were affected during the period of April to June 1945 and 8 died Three infants were affected during the period of October to November 1945 and 1 died Diphtheria in suckling infants is far from being a clinical rarity Only the localization is different and coryza is the dominant manifestation at this early age Prognosis is always unfavorable Rapid and intensive serum therapy combined with injections of cardiacs and tonics and judicious measures of prophylaxis will not prevent but at least it will reduce the number of the infants affected by the disease, which at this age has a character of pronounced gravity

Lyon Chirurgical, Paris

41:257-384 (May-June) 1946

*Prognosis and Treatment of Great Embolisms of Pulmonary Artery R Leriche —p 257
Technic, Indications and Results of Cervicocystopexy E Perrin —p 270
*Late Results of 63 Splanchnicectomies for Various Disorders Apart from Chronic Hypertension R Fontaine, E Forster and C Stefanini —p 279
Use of Manometric and Radiologic Control During Operation for Chronic Pancreatitis P Mallet Guy and R Jeanjean —p 301
New Aspects of Infection in War Surgery Role of Sulfonamides and Penicillin E Curtillet —p 317

Prognosis and Treatment of Great Embolisms of Pulmonary Artery.—The factors on which the diagnosis of embolism is based include, according to Leriche, an operation within the preceding six to ten days, a sudden syncopal attack, anxiety, air hunger, dyspnea cyanosis and a sudden drop in blood pressure The best way to arrive at a localizing diagnosis is by eliminating the sympathetic element by blockage The author and Fontaine resorted to this measure in the form of anesthesia of the stellate ganglion which modifies the picture of embolism and preserves the patient's life The first patient so treated was cured by stellate infiltration, but subsequently stellate anesthesia was effective for only a few minutes patients dying ten minutes later Since infiltration of the stellate not only is of therapeutic value but also serves diagnostic localization Leriche thinks that it ought to be the first measure in the presence of an embolic picture If the condition improves, even if infiltration has to be repeated, embolism involves a secondary branch, but if improvement is very brief the main trunk is obliterated and embolectomy becomes necessary Intravenous injection of procaine hydrochloride can be substituted for stellate infiltration Sixty per cent of the patients with embolism die in less than fifteen minutes Ten minutes is required for the intravenous injection of procaine hydrochloride, and if such an injection has no effect and the patient is unconscious and has no pulse it is useless to operate The immediate mortality of embolectomy has been 70 per cent

Late Results of Splanchnicectomy.—Fontaine and his associates review the late results of 63 splanchnicectomies The operation does not effect a cure in thromboangiitis but in a large number of cases it arrests the disease and, combined with sympathectomy, promotes the collateral circulation Observations on 3 cases of Raynaud s disease in which sympathectomies, splanchnicectomies and adrenalectomies were done disclosed that in this disease further clarification is necessary Dorsal splanchnicectomy provided inferior to Heller s operation in 2 cases of megaesophagus and was even less effective than repeated simple splanchnic infiltrations Splanchnicectomy produced excellent results in megadolichocolon Of 2 cases of habitual vomiting 1 responded to splanchnicectomy and the other did not There was also 1 success and 1 failure after splanchnicectomy for the visceral crisis of tabes Splanchnicectomy was effective in painful hydronephroses

Paris Médical

2:413-420 (Sept. 21) 1946

Otomastoiditis Associated with Typhoid in Young Children. C. Sarrouy, P. Combe, Arnaud-Battandier and Tabone.—p. 413.
*Should Herniated Disk be Considered Cause or Sequel of, Sciatica? F. Thiébaut.—p. 417.

Sciatica and Herniated Disk.—Thiébaut believes that rheumatic inflammation is the cause of sciatica. Trauma plays an important part in 50 per cent of the cases but is not indispensable. The rheumatic inflammation is responsible for the congestion and the edema of the root, for the thickening of the yellow ligament, for the calcium deposits which infiltrate the periarticular tissues and probably the disk so as to impair its elasticity. The radiculitis is the most important factor causing pain and spasm of the corresponding muscles. This spasm has the tendency to crowd the vertebrae and to compress the disks. The disk may become herniated and impinge on the inflamed root with the result that the interdiscoapophysial space is narrowed. The herniated disk is the sequel and not the cause of the idiopathic sciatica, for which the term rheumatic sciatica seems more appropriate. This concept explains the cure of the sciatica without the removal of the disk and without radectomy and laminectomy in several of the author's cases of sciatica associated with herniated disk.

Presse Médical, Paris

54:653-664 (Oct. 5) 1946

Two Cases of Tetanus with Rapid Death After Intestinal Resection for Volvulus of Small Intestine Associated with Gangrene. P. Moulonguet, J. Patel and F. Poussier.—p. 653.
Acute Osteoporosis, Immobilization Osteoporosis or Alarm Syndrome. A. Lichtwitz.—p. 654.
*Diagnosis of Primary Thrombosis of Internal Carotid Artery in Cervical Region by Means of Determination of Values of Systolic Pressure of Central Artery of Retina. M. Miletti.—p. 655.

Primary Thrombosis of Internal Carotid Artery.—Miletti studied 38 cases of primary thrombosis of the internal carotid artery. Determination of the systolic retinal pressure offers considerable aid in the diagnosis of thrombosis of the internal carotid artery. In failure of circulation in one of the two carotid arteries the retinal systolic pressure is lower on the side of the lesion although the diastolic pressure may be the same on the two sides. Before or after compression of the common carotid artery in the neck there is no difference between the retinal systolic and diastolic pressure on the side of the lesion. Lowering of retinal pressure on both sides results from compression of the normal carotid artery on the side opposite to the lesion, but the drop in retinal pressure is more pronounced on the side of the lesion.

Gastroenterologia, Basel

71:129-192 (No. 3) 1946

Scurvy and Vertigo. H. Öhnell.—p. 129.
*Roentgenologic and Clinical Aspects of Large Peptic Ulcers. N. H. Krisnapoller.—p. 142.
Treatment of Urticarial Disorders with Vitamin K. P. Kallós.—p. 171.

Scurvy and Vertigo.—The possibility that scurvy may bring on vertigo first occurred to Öhnell in connection with the appearance of the symptoms of Ménière's disease in a patient who had scurvy as the result of a prolonged scorbutic diet. Furthermore, experimental investigations on monkeys disclosed scorbutic changes in the inner ear which, according to generally accepted theories, are of significance with regard to the appearance of vertigo. The author also reviews observations on cases of vertigo in which scorbutic conditions were detected. There were 87 such cases, and in the majority (85 per cent) treatment with vitamin C resulted in improvement in the vertigo.

Roentgenologic and Clinical Aspects of Large Peptic Ulcer.—Krisnapoller found that of a total of 384 patients with gastric ulcer 41 per cent had niches measuring more than 1.5 cm. in the longitudinal axis of the stomach (large niches) and 6.5 per cent had niches measuring more than 3 cm. (giant niches). The frequency of the large and giant niches increases with age. Their favorite site is the body of the stomach, in contrast to the small niches in the pyloric canal. The large ulcers more frequently leave residual niches and more often lead to local recurrences than the small ones. The giant niches show the highest percentages of subacid and achylic curves and in about 50 per cent an increase in the sedimentation rate. The extent of a hemorrhage from the ulcer does not appear to depend on the size of the ulcer. The large ulcers are more often accompanied with skin and cardiovascular diseases than the small ulcers.

Schweizerische Zeitschrift für Tuberkulose, Basel

3:1-108 (Suppl. 1) 1946

Tuberculous Stenosis of Large Bronchi: Clinical, Roentgenologic and Anatomicopathologic Study. P. M. Steiner.—p. 1.
*Treatment of Tracheobronchial Tuberculosis. J. P. Secretan and P. Zuidema.—p. 78.

Treatment of Tracheobronchial Tuberculosis.—Secretan and Zuidema performed bronchoscopies on 98 patients, in 45 of whom tuberculosis of the trachea or the bronchi was demonstrated. Bronchoscopy is indispensable in the diagnosis and prognosis of tracheobronchial tuberculosis, which frequently represents a disease in itself, independent of the specific condition of the lungs. Satisfactory results were obtained with local treatment. The bronchial tree was cleansed and aspirated, and the mucosa cocainized. A 10 to 30 per cent solution of silver nitrate was applied to the lesions of the trachea, while the bronchi were treated with the electrosurgical cautery. In cicatricial stenosis, bronchoscopy with the combined use of a sound and cautery was effective in restoring the lumen and insuring adequate drainage. Perforation of the bronchus occurred only once in the course of 250 bronchoscopies. In contrast to the American point of view, the authors believe that collapse therapy is indicated in tracheobronchial tuberculosis for the control of bronchiectasis. Bronchoscopy does not spread the tuberculous process.

Policlinico (Sez. Prat.), Rome

53:813-822 (Sept. 30) 1946. **Partial Index**

*Vitamin B_1 in Treatment of Headache after Spinal Anesthesia. G. Bazzocchi.—p. 828.

Vitamin B_1 in Headache after Spinal Anesthesia.—Acute headache and rachialgia following spinal anesthesia were readily controlled by intravenous injection of 5 to 25 mg. of vitamin B_1. In the majority of the cases the injection was repeated in twelve or twenty-four hours on the reappearance of pain. The total number of injections varied from three to six in three days.

Día Médico, Buenos Aires

18:1437-1466 (Sept. 30) 1946. **Partial Index**

*Complication of Antirabic Vaccine. S. Zabludovich.—p. 1454.

Complication of Antirabic Vaccine.—A butcher was bitten by a pig when killing the animal. Antirabic vaccination was given by false alarm. Seven days after completion of the treatment the patient exhibited bilateral facial paralysis, inability to walk, anuria and acute symptoms simulating acute peritonitis. The successful treatment consisted in daily subcutaneous injections of sodium chloride and dextrose solutions in liberal quantities and daily intravenous injections of vitamin B_1 in doses of 100 mg. The acute symptoms were rapidly controlled. Vitamin B_1 therapy was continued up to a total dosage of 1,500 mg. in two weeks.

Revista Sudamericana de Morfol., Buenos Aires

4:1-992 (May) 1946. **Partial Index**

*Sclerogenic Cardiopathy Due to Avitaminosis B_1. A. E. Bianchi.—p. 1.

Sclerogenic Cardiopathy.—A man aged 37 with a history of avitaminosis B_1 showed symptoms of progressive heart failure, an x-ray shadow of an enlarged heart, acute hypotension and electrocardiographic signs of myocardial damage. Death occurred ten months from onset of the disease. The anatomic diagnosis was cardiac hypertrophy with dilatation, severe myocardial sclerosis and renal infarcts. Lesions were not found in any other organs. Microscopic examination revealed diffuse myocardial sclerosis of nonvascular origin, atrophic lesions of the muscle fibers, intense interstitial edema and mural thrombosis

overlying areas of very thickened endocardium. Bianchi believes these lesions were due to a vitamin B_1 (thiamine) deficiency and proposes the term "sclerogenic cardiopathy from avitaminosis B_1" to designate this entity of heart disease, which is rare.

Wiener klinische Wochenschrift, Vienna

58:557-572 (Sept. 27) 1946

Occurrence of Keratomalacia in Adults in Austria. A. Pillat.—p. 557.
Sarcoma of Vault of Cranium, with Special Consideration of So-Called Ewing's Sarcoma and of Reticulum Cell Lymphosarcoma. O. Wichtl.—p. 560.
Conservative and Surgical Treatment of Ulcus Cruris. L. Kumer.—p. 564.
Case of Primary Carcinoma of Bartholin's Gland. V. Grünberger.—p. 566.
*Wider Indication as to Temporary Elimination of Phrenic Nerve in Hemoptysis. E. Stangl.—p. 568.

Temporary Elimination of Phrenic Nerve in Hemoptysis.—Stangl performed phrenemphraxis in 125 cases of hemoptysis associated with pulmonary tuberculosis. Temporary elimination of the phrenic nerve is suggested for all cases in which usual treatment is ineffective and in which more extensive surgical intervention must be omitted for danger of death resulting from very poor general condition. Phrenemphraxis may also prevent the complications often associated with phrenic avulsion.

American Review of Soviet Medicine, New York

4:1-96 (Oct.) 1946

*Direct Electrocardiography of Heart During Restoration. S. V. Andreyev, E. I. Borisova and V. S. Rusinov.—p. 4.
Special Form of Virus Neuroinfection in Children. G. D. Leshchenko.—p. 7.
*Sleep in Treatment of Pain. S. D. Kaminski.—p. 13.
*Causalgia and Its Treatment. V. V. Zikeyev.—p. 16.
Posttraumatic Contractures. A. D. Speranski.—p. 22.
Autonomic Disturbances in Brain Injuries. I. S. Weinberg.—p. 25.
Pyramidal Syndrome. E. V. Shmidt.—p. 30.
Histology of Nerve Graft Four Months After Operation. I. K. Yesipova.—p. 37.
Motor Chronaxia During Blindfolding in Nerve Trauma. V. M. Vasilevski.—p. 40.
Sensory and Subsensory Responses from External Stimuli. G. V. Gersuni.—p. 44.
Nervous Stimulation and Cell Chemistry. C. S. Koshtoyants.—p. 45.
Combined Therapy in Schizophrenia. A. G. Ivanov-Smolenski.—p. 54.
Progress of Russian Psychiatry. A. O. Edelshtein.—p. 59.

Direct Electrocardiography in Restoration.—Andreyev and his co-workers carried out electrophysiologic experiments on 100 isolated hearts of children seven to thirty-six hours after the children had died from various infections. The hearts were perfused with a modified oxygenated Tyrode solution. The children were between the ages of several days and 4 years. Direct observation of the revived human heart by electrocardiography proved the presence of multiple foci of excitation in auricular fibrillation. It also established the actual form of activity occurring separately in the left and right ventricles of the human heart. This method should prove valuable in the investigation of many other conflicting problems in electrocardiography.

Sleep in Treatment of Pain.—Kaminski induced a prolonged state of sleep in patients suffering from severe pain that arose after injuries to the peripheral nerves of the upper and lower extremities. A mixture of evipal sodium, barbital sodium and procaine hydrochloride in glucose solution was administered internally in drops. After taking this mixture the patients slept from fifteen to eighteen hours out of every twenty-four. On the third or fourth day of the prolonged sleep the pain became less intense. In moderately severe cases intramuscular injections of evipal and barbital sodium were given into each buttock seven to eight times for one to two days and were combined with intravenous injections of procaine hydrochloride. The intense pain disappeared fourteen to eighteen days later. Relapses have not occurred.

Causalgia and Its Treatment.—Zikeyev induced prolonged sleep of 120 to 168 hours in 37 patients with causalgia following surgery of the nerve. Only 2 patients presented a mild type of causalgia, while the rest showed severe causalgia of long standing. All except 1 recovered. Between doses the patient may awake to a state of drowsiness. Fluids are then administered, and the bladder is emptied. During continued sound sleep, food and fluids are administered by a gastric tube and the bladder is catheterized. The body temperature of the patient is measured at one hour intervals. Pulse and respiration are carefully recorded.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

90:1104-1142 (Sept. 7) 1946. **Partial Index**

Intratracheal Anesthesia. L. D. Eerland.—p. 1113.
Multiple Myelomas, or Kahler's Disease. A. Bonebakker, L. W. van den Burg and F. de Wijn.—p. 1118.
Granulocytopenia After Aminothiazole Treatment for Thyrotoxicosis: Case. L. P. Kian.—p. 1122.
*Reduction of Number of Relapses in Patients with Malaria. C. W. F. Winckel.—p. 1124.

Reduction of Relapses in Malaria.—Winckel says that relapses have been rapid and frequent in regions of the Netherlands in which tertian malaria is endemic. About half of the patients have a relapse (parasitemia and fever) the same year or the year after adequate treatment with quinine. Earlier it had been noted that relapses were much less frequent when patients were treated with quinine and plasmochin than after treatment with quinine alone. When plasmochin was no longer available, recurrences became more frequent. To reduce the high incidence of relapses the author advises treatment with a mixture of quinine sulfate 750 to 900 mg. and pamaquine about 50 mg. daily for two weeks.

90:1235-1290 (Sept. 28) 1946

Nontuberculous Renal Abscesses and Pressure Points of Pasteau. H. R. van der Molen.—p. 1239.
Osteosclerotic Anemia. T. J. J. H. Meuwissen and C. J. A. Bakx.—p. 1245.
*Cysts and Tumors of Mediastinum. L. D. Eerland.—p. 1252.
Intrathoracic Neurogenic Tumors (Neurinoma, Ganglioneuroma). L. D. Eerland.—p. 1257.

Cysts and Tumors of Mediastinum.—Eerland discusses the symptomatology and differential diagnosis of the various types of cysts and tumors of the mediastinum and reports the histories of 2 patients on whom thoracotomy was performed because of a teratodermoid of the mediastinum. The author points out the necessity of performing thoracotomy in every case in which a complete examination does not give a definite diagnosis as to the nature of the shadow found on the roentgenogram.

Acta Medica Scandinavica, Stockholm

125:97-192 (Aug. 22) 1946

Tumors Caused by Virus. M. M. Newiadomski.—p. 97.
Thyrotoxicosis at Ulleval Hospital in Years 1934 to 1944, with Special View to Frequency of Disease. R. Grelland.—p. 108.
Total Bases in Serum on Dehydration. O. J. Broch.—p. 139.
Renal Threshold of Glucose: XII. G. Ekehorn.—p. 148.
*Attempts to Demonstrate Presence of Pressor Substance in Blood of Patients with Renal Hypertension. H. Kreutzfeldt.—p. 171.
Extensive Calcification in Heart at Early Age. F. S. P. van Buchem.—p. 182.

Pressor Substance in Blood of Patients with Renal Hypertension.—Kreutzfeldt employed isolated rabbit ears for various perfusion experiments. Preliminary experiments showed that the vessels of the ear react strongly to weak solutions of epinephrine but that quantitatively the vessels may react differently to the same concentration. The isolated rabbit ear may be considered a sensitive preparation for vasoconstrictive substances, but it cannot be used for quantitative measurement. Plasma and serum from rabbits, calves and man produced vasoconstriction when added to isotonic solution of three chlorides used as a perfusing medium in the isolated rabbit's ear. The degree of constriction proved only approximately proportionate to the concentration. Plasma from normal persons and plasma from patients with renal hypertension both caused vasoconstriction, and the effect of the plasma from patients with renal hypertension was no more pronounced than that of normal plasma. The author's experiments followed Page's method for demonstrating the presence of pressor substance in the blood of patients with renal hypertension except for using defibrinated blood of nephrectomized rabbits instead of dogs as the perfusing medium. The demonstration of the pressor substance in the blood failed, and Page's results were not verified because vasoconstrictive substances were present in both normal blood and that from patients with hypertension.

overlying areas of very thickened endocardium. Bianchi believes these lesions were due to a vitamin B_1 (thiamine) deficiency and proposes the term "sclerogenic cardiopathy from avitaminosis B_1" to designate this entity of heart disease, which is rare.

Wiener klinische Wochenschrift, Vienna

58:557-572 (Sept. 27) 1946

Occurrence of Keratomalacia in Adults in Austria. A. Pillat.—p. 557.
Sarcoma of Vault of Cranium, with Special Consideration of So-Called Ewing's Sarcoma and of Reticulum Cell Lymphosarcoma. O. Wichtl.—p. 560.
Conservative and Surgical Treatment of Ulcus Cruris. L. Kumer.—p. 564.
Case of Primary Carcinoma of Bartholin's Gland. V. Grünberger.—p. 566.
*Wider Indication as to Temporary Elimination of Phrenic Nerve in Hemoptysis. E. Stangl.—p. 568.

Temporary Elimination of Phrenic Nerve in Hemoptysis.—Stangl performed phrenemphraxis in 125 cases of hemoptysis associated with pulmonary tuberculosis. Temporary elimination of the phrenic nerve is suggested for all cases in which usual treatment is ineffective and in which more extensive surgical intervention must be omitted for danger of death resulting from very poor general condition. Phrenemphraxis may also prevent the complications often associated with phrenic avulsion.

American Review of Soviet Medicine, New York

4:1-96 (Oct.) 1946

*Direct Electrocardiography of Heart During Restoration. S. V. Andreyev, E. I. Borisova and V. S. Rusinov.—p. 4.
Special Form of Virus Neuroinfection in Children. G. D. Leshchenko.—p. 7.
*Sleep in Treatment of Pain. S. D. Kaminski.—p. 13.
*Causalgia and Its Treatment. V. V. Zikeyev.—p. 16.
Posttraumatic Contractures. A. D. Speranski.—p. 22.
Autonomic Disturbances in Brain Injuries. I. S. Weinberg.—p. 25.
Pyramidal Syndrome. E. V. Shmidt.—p. 30.
Histology of Nerve Graft Four Months After Operation. I. K. Yesipova.—p. 37.
Motor Chronaxia During Blindfolding in Nerve Trauma. V. M. Vasilevski.—p. 40.
Sensory and Subsensory Responses from External Stimuli. G. V. Gersuni.—p. 44.
Nervous Stimulation and Cell Chemistry. C. S. Koshtoyants.—p. 45.
Combined Therapy in Schizophrenia. A. G. Ivanov-Smolenski.—p. 54.
Progress of Russian Psychiatry. A. O. Edelshtein.—p. 59.

Direct Electrocardiography in Restoration.—Andreyev and his co-workers carried out electrophysiologic experiments on 100 isolated hearts of children seven to thirty-six hours after the children had died from various infections. The hearts were perfused with a modified oxygenated Tyrode solution. The children were between the ages of several days and 4 years. Direct observation of the revived human heart by electrocardiography proved the presence of multiple foci of excitation in auricular fibrillation. It also established the actual form of activity occurring separately in the left and right ventricles of the human heart. This method should prove valuable in the investigation of many other conflicting problems in electrocardiography.

Sleep in Treatment of Pain.—Kaminski induced a prolonged state of sleep in patients suffering from severe pain that arose after injuries to the peripheral nerves of the upper and lower extremities. A mixture of evipal sodium, barbital sodium and procaine hydrochloride in glucose solution was administered internally in drops. After taking this mixture the patients slept from fifteen to eighteen hours out of every twenty-four. On the third or fourth day of the prolonged sleep the pain became less intense. In moderately severe cases intramuscular injections of evipal and barbital sodium were given into each buttock seven to eight times for one to two days and were combined with intravenous injections of procaine hydrochloride. The intense pain disappeared fourteen to eighteen days later. Relapses have not occurred.

Causalgia and Its Treatment.—Zikeyev induced prolonged sleep of 120 to 168 hours in 37 patients with causalgia following surgery of the nerve. Only 2 patients presented a mild type of causalgia, while the rest showed severe causalgia of long standing. All except 1 recovered. Between doses the patient may awake to a state of drowsiness. Fluids are then administered, and the bladder is emptied. During continued sound sleep, food and fluids are administered by a gastric tube and the bladder is catheterized. The body temperature of the patient is measured at one hour intervals. Pulse and respiration are carefully recorded.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

90:1104-1142 (Sept. 7) 1946. **Partial Index**

Intratracheal Anesthesia. L. D. Eerland.—p. 1113.
Multiple Myelomas, or Kahler's Disease. A. Bonebakker, L. W. van den Burg and F. de Wijn.—p. 1118.
Granulocytopenia After Aminothiazole Treatment for Thyrotoxicosis: Case. L. P. Kian.—p. 1122.
*Reduction of Number of Relapses in Patients with Malaria. C. W. F. Winckel.—p. 1124.

Reduction of Relapses in Malaria.—Winckel says that relapses have been rapid and frequent in regions of the Netherlands in which tertian malaria is endemic. About half of the patients have a relapse (parasitemia and fever) the same year or the year after adequate treatment with quinine. Earlier it had been noted that relapses were much less frequent when patients were treated with quinine and plasmochin than after treatment with quinine alone. When plasmochin was no longer available, recurrences became more frequent. To reduce the high incidence of relapses the author advises treatment with a mixture of quinine sulfate 750 to 900 mg. and pamaquine about 50 mg. daily for two weeks.

90:1235-1290 (Sept. 28) 1946

Nontuberculous Renal Abscesses and Pressure Points of Pasteau. H. R. van der Molen.—p. 1239.
Osteosclerotic Anemia. T. J. J. H. Meuwissen and C. J. A. Bakx.—p. 1245.
*Cysts and Tumors of Mediastinum. L. D. Eerland.—p. 1252.
Intrathoracic Neurogenic Tumors (Neurinoma, Ganglioneuroma). L. D. Eerland.—p. 1257.

Cysts and Tumors of Mediastinum.—Eerland discusses the symptomatology and differential diagnosis of the various types of cysts and tumors of the mediastinum and reports the histories of 2 patients on whom thoracotomy was performed because of a teratodermoid of the mediastinum. The author points out the necessity of performing thoracotomy in every case in which a complete examination does not give a definite diagnosis as to the nature of the shadow found on the roentgenogram.

Acta Medica Scandinavica, Stockholm

125:97-192 (Aug. 22) 1946

Tumors Caused by Virus. M. M. Newiadomski.—p. 97.
Thyrotoxicosis at Ulleval Hospital in Years 1934 to 1944, with Special View to Frequency of Disease. R. Grelland.—p. 108.
Total Bases in Serum on Dehydration. O. J. Broch.—p. 139.
Renal Threshold of Glucose: XII. G. Ekehorn.—p. 148.
*Attempts to Demonstrate Presence of Pressor Substance in Blood of Patients with Renal Hypertension. H. Kreutzfeldt.—p. 171.
Extensive Calcification in Heart at Early Age. F. S. P. van Buchem.—p. 182.

Pressor Substance in Blood of Patients with Renal Hypertension.—Kreutzfeldt employed isolated rabbit ears for various perfusion experiments. Preliminary experiments showed that the vessels of the ear react strongly to weak solutions of epinephrine but that quantitatively the vessels may react differently to the same concentration. The isolated rabbit ear may be considered a sensitive preparation for vasoconstrictive substances, but it cannot be used for quantitative measurement. Plasma and serum from rabbits, calves and man produced vasoconstriction when added to isotonic solution of three chlorides used as a perfusing medium in the isolated rabbit's ear. The degree of constriction proved only approximately proportionate to the concentration. Plasma from normal persons and plasma from patients with renal hypertension both caused vasoconstriction, and the effect of the plasma from patients with renal hypertension was no more pronounced than that of normal plasma. The author's experiments followed Page's method for demonstrating the presence of pressor substance in the blood of patients with renal hypertension except for using defibrinated blood of nephrectomized rabbits instead of dogs as the perfusing medium. The demonstration of the pressor substance in the blood failed, and Page's results were not verified because vasoconstrictive substances were present in both normal blood and that from patients with hypertension.

overlying areas of very thickened endocardium. Bianchi believes these lesions were due to a vitamin B_1 (thiamine) deficiency and proposes the term "sclerogenic cardiopathy from avitaminosis B_1" to designate this entity of heart disease, which is rare.

Wiener klinische Wochenschrift, Vienna

58:557-572 (Sept. 27) 1946

Occurrence of Keratomalacia in Adults in Austria. A. Pillat.—p. 557.
Sarcoma of Vault of Cranium, with Special Consideration of So-Called Ewing's Sarcoma and of Reticulum Cell Lymphosarcoma. O. Wichtl.—p. 560.
Conservative and Surgical Treatment of Ulcus Cruris. L. Kumer.—p. 564.
Case of Primary Carcinoma of Bartholin's Gland. V. Grünberger.—p. 566.
*Wider Indication as to Temporary Elimination of Phrenic Nerve in Hemoptysis. E. Stangl.—p. 568.

Temporary Elimination of Phrenic Nerve in Hemoptysis.—Stangl performed phrenemphraxis in 125 cases of hemoptysis associated with pulmonary tuberculosis. Temporary elimination of the phrenic nerve is suggested for all cases in which usual treatment is ineffective and in which more extensive surgical intervention must be omitted for danger of death resulting from very poor general condition. Phrenemphraxis may also prevent the complications often associated with phrenic avulsion.

American Review of Soviet Medicine, New York

4:1-96 (Oct.) 1946

*Direct Electrocardiography of Heart During Restoration. S. V. Andreyev, E. I. Borisova and V. S. Rusinov.—p. 4.
Special Form of Virus Neuroinfection in Children. G. D. Leshchenko.—p. 7.
*Sleep in Treatment of Pain. S. D. Kaminski.—p. 13.
*Causalgia and Its Treatment. V. V. Zikeyev.—p. 16.
Posttraumatic Contractures. A. D. Speranski.—p. 22.
Autonomic Disturbances in Brain Injuries. I. S. Weinberg.—p. 25.
Pyramidal Syndrome. E. V. Shmidt.—p. 30.
Histology of Nerve Graft Four Months After Operation. I. K. Yesipova.—p. 37.
Motor Chronaxia During Blindfolding in Nerve Trauma. V. M. Vasilevski.—p. 40.
Sensory and Subsensory Responses from External Stimuli. G. V. Gersuni.—p. 44.
Nervous Stimulation and Cell Chemistry. C. S. Koshtoyants.—p. 45.
Combined Therapy in Schizophrenia. A. G. Ivanov-Smolenski.—p. 54.
Progress of Russian Psychiatry. A. O. Edelshtein.—p. 59.

Direct Electrocardiography in Restoration.—Andreyev and his co-workers carried out electrophysiologic experiments on 100 isolated hearts of children seven to thirty-six hours after the children had died from various infections. The hearts were perfused with a modified oxygenated Tyrode solution. The children were between the ages of several days and 4 years. Direct observation of the revived human heart by electrocardiography proved the presence of multiple foci of excitation in auricular fibrillation. It also established the actual form of activity occurring separately in the left and right ventricles of the human heart. This method should prove valuable in the investigation of many other conflicting problems in electrocardiography.

Sleep in Treatment of Pain.—Kaminski induced a prolonged state of sleep in patients suffering from severe pain that arose after injuries to the peripheral nerves of the upper and lower extremities. A mixture of evipal sodium, barbital sodium and procaine hydrochloride in glucose solution was administered internally in drops. After taking this mixture the patients slept from fifteen to eighteen hours out of every twenty-four. On the third or fourth day of the prolonged sleep the pain became less intense. In moderately severe cases intramuscular injections of evipal and barbital sodium were given into each buttock seven to eight times for one to two days and were combined with intravenous injections of procaine hydrochloride. The intense pain disappeared fourteen to eighteen days later. Relapses have not occurred.

Causalgia and Its Treatment.—Zikeyev induced prolonged sleep of 120 to 168 hours in 37 patients with causalgia following surgery of the nerve. Only 2 patients presented a mild type of causalgia, while the rest showed severe causalgia of long standing. All except 1 recovered. Between doses the patient may awake to a state of drowsiness. Fluids are then administered, and the bladder is emptied. During continued sound sleep, food and fluids are administered by a gastric tube and the bladder is catheterized. The body temperature of the patient is measured at one hour intervals. Pulse and respiration are carefully recorded.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

90:1104-1142 (Sept. 7) 1946. **Partial Index**

Intratracheal Anesthesia. L. D. Eerland.—p. 1113.
Multiple Myelomas, or Kahler's Disease. A. Bonebakker, L. W. van den Burg and F. de Wijn.—p. 1118.
Granulocytopenia After Aminothiazole Treatment for Thyrotoxicosis: Case. L. P. Kian.—p. 1122.
*Reduction of Number of Relapses in Patients with Malaria. C. W. F. Winckel.—p. 1124.

Reduction of Relapses in Malaria.—Winckel says that relapses have been rapid and frequent in regions of the Netherlands in which tertian malaria is endemic. About half of the patients have a relapse (parasitemia and fever) the same year or the year after adequate treatment with quinine. Earlier it had been noted that relapses were much less frequent when patients were treated with quinine and plasmochin than after treatment with quinine alone. When plasmochin was no longer available, recurrences became more frequent. To reduce the high incidence of relapses the author advises treatment with a mixture of quinine sulfate 750 to 900 mg. and pamaquine about 50 mg. daily for two weeks.

90:1235-1290 (Sept. 28) 1946

Nontuberculous Renal Abscesses and Pressure Points of Pasteau. H. R. van der Molen.—p. 1239.
Osteosclerotic Anemia. T. J. J. H. Meuwissen and C. J. A. Bakx.—p. 1245.
*Cysts and Tumors of Mediastinum. L. D. Eerland.—p. 1252.
Intrathoracic Neurogenic Tumors (Neurinoma, Ganglioneuroma). L. D. Eerland.—p. 1257.

Cysts and Tumors of Mediastinum.—Eerland discusses the symptomatology and differential diagnosis of the various types of cysts and tumors of the mediastinum and reports the histories of 2 patients on whom thoracotomy was performed because of a teratodermoid of the mediastinum. The author points out the necessity of performing thoracotomy in every case in which a complete examination does not give a definite diagnosis as to the nature of the shadow found on the roentgenogram.

Acta Medica Scandinavica, Stockholm

125:97-192 (Aug. 22) 1946

Tumors Caused by Virus. M. M. Newiadomski.—p. 97.
Thyrotoxicosis at Ulleval Hospital in Years 1934 to 1944, with Special View to Frequency of Disease. R. Grelland.—p. 108.
Total Bases in Serum on Dehydration. O. J. Broch.—p. 139.
Renal Threshold of Glucose: XII. G. Ekehorn.—p. 148.
*Attempts to Demonstrate Presence of Pressor Substance in Blood of Patients with Renal Hypertension. H. Kreutzfeldt.—p. 171.
Extensive Calcification in Heart at Early Age. F. S. P. van Buchem.—p. 182.

Pressor Substance in Blood of Patients with Renal Hypertension.—Kreutzfeldt employed isolated rabbit ears for various perfusion experiments. Preliminary experiments showed that the vessels of the ear react strongly to weak solutions of epinephrine but that quantitatively the vessels may react differently to the same concentration. The isolated rabbit ear may be considered a sensitive preparation for vasoconstrictive substances, but it cannot be used for quantitative measurement. Plasma and serum from rabbits, calves and man produced vasoconstriction when added to isotonic solution of three chlorides used as a perfusing medium in the isolated rabbit's ear. The degree of constriction proved only approximately proportionate to the concentration. Plasma from normal persons and plasma from patients with renal hypertension both caused vasoconstriction, and the effect of the plasma from patients with renal hypertension was no more pronounced than that of normal plasma. The author's experiments followed Page's method for demonstrating the presence of pressor substance in the blood of patients with renal hypertension except for using defibrinated blood of nephrectomized rabbits instead of dogs as the perfusing medium. The demonstration of the pressor substance in the blood failed, and Page's results were not verified because vasoconstrictive substances were present in both normal blood and that from patients with hypertension.

Paris Médical

2:*413-420 (Sept. 21) 1946*

Otomastoiditis Associated with Typhoid in Young Children. C. Sarrouy, P. Combe, Arnaud-Battandier and Tabone.—p. 413.

*Should Herniated Disk be Considered Cause or Sequel of, Sciatica? F. Thiébaut.—p. 417.

Sciatica and Herniated Disk.—Thiébaut believes that rheumatic inflammation is the cause of sciatica. Trauma plays an important part in 50 per cent of the cases but is not indispensable. The rheumatic inflammation is responsible for the congestion and the edema of the root, for the thickening of the yellow ligament, for the calcium deposits which infiltrate the periarticular tissues and probably the disk so as to impair its elasticity. The radiculitis is the most important factor causing pain and spasm of the corresponding muscles. This spasm has the tendency to crowd the vertebrae and to compress the disks. The disk may become herniated and impinge on the inflamed root with the result that the interdiscoapophysial space is narrowed. The herniated disk is the sequel and not the cause of the idiopathic sciatica, for which the term rheumatic sciatica seems more appropriate. This concept explains the cure of the sciatica without the removal of the disk and without radectomy and laminectomy in several of the author's cases of sciatica associated with herniated disk.

Presse Médical, Paris

54:653-664 (Oct. 5) 1946

Two Cases of Tetanus with Rapid Death After Intestinal Resection for Volvulus of Small Intestine Associated with Gangrene. P. Moulonguet, J. Patel and F. Poussier.—p. 653.

Acute Osteoporosis, Immobilization Osteoporosis or Alarm Syndrome. A. Lichtwitz.—p. 654.

*Diagnosis of Primary Thrombosis of Internal Carotid Artery in Cervical Region by Means of Determination of Values of Systolic Pressure of Central Artery of Retina. M. Miletti.—p. 655.

Primary Thrombosis of Internal Carotid Artery.—Miletti studied 38 cases of primary thrombosis of the internal carotid artery. Determination of the systolic retinal pressure offers considerable aid in the diagnosis of thrombosis of the internal carotid artery. In failure of circulation in one of the two carotid arteries the retinal systolic pressure is lower on the side of the lesion although the diastolic pressure may be the same on the two sides. Before or after compression of the common carotid artery in the neck there is no difference between the retinal systolic and diastolic pressure on the side of the lesion. Lowering of retinal pressure on both sides results from compression of the normal carotid artery on the side opposite to the lesion, but the drop in retinal pressure is more pronounced on the side of the lesion.

Gastroenterologia, Basel

71:129-192 (No. 3) 1946

Scurvy and Vertigo. H. Öhnell.—p. 129.

*Roentgenologic and Clinical Aspects of Large Peptic Ulcers. N. H. Krisnapoller.—p. 142.

Treatment of Urticarial Disorders with Vitamin K. P. Kallós.—p. 171.

Scurvy and Vertigo.—The possibility that scurvy may bring on vertigo first occurred to Öhnell in connection with the appearance of the symptoms of Ménière's disease in a patient who had scurvy as the result of a prolonged scorbutic diet. Furthermore, experimental investigations on monkeys disclosed scorbutic changes in the inner ear which, according to generally accepted theories, are of significance with regard to the appearance of vertigo. The author also reviews observations on cases of vertigo in which scorbutic conditions were detected. There were 87 such cases, and in the majority (85 per cent) treatment with vitamin C resulted in improvement in the vertigo.

Roentgenologic and Clinical Aspects of Large Peptic Ulcer.—Krisnapoller found that of a total of 384 patients with gastric ulcer 41 per cent had niches measuring more than 1.5 cm. in the longitudinal axis of the stomach (large niches) and 6.5 per cent had niches measuring more than 3 cm. (giant niches). The frequency of the large and giant niches increases with age. Their favorite site is the body of the stomach, in contrast to the small niches in the pyloric canal. The large ulcers more frequently leave residual niches and more often lead to local recurrences than the small ones. The giant niches show the highest percentages of subacid and achylic curves and in about 50 per cent an increase in the sedimentation rate. The extent of a hemorrhage from the ulcer does not appear to depend on the size of the ulcer. The large ulcers are more often accompanied with skin and cardiovascular diseases than the small ulcers.

Schweizerische Zeitschrift für Tuberkulose, Basel

3:1-108 (Suppl. 1) 1946

Tuberculous Stenosis of Large Bronchi: Clinical, Roentgenologic and Anatomicopathologic Study. P. M. Steiner.—p. 1.

*Treatment of Tracheobronchial Tuberculosis. J. P. Secretan and P. Zuidema.—p. 78.

Treatment of Tracheobronchial Tuberculosis.—Secretan and Zuidema performed bronchoscopies on 98 patients, in 45 of whom tuberculosis of the trachea or the bronchi was demonstrated. Bronchoscopy is indispensable in the diagnosis and prognosis of tracheobronchial tuberculosis, which frequently represents a disease in itself, independent of the specific condition of the lungs. Satisfactory results were obtained with local treatment. The bronchial tree was cleansed and aspirated, and the mucosa cocainized. A 10 to 30 per cent solution of silver nitrate was applied to the lesions of the trachea, while the bronchi were treated with the electrosurgical cautery. In cicatricial stenosis, bronchoscopy with the combined use of a sound and cautery was effective in restoring the lumen and insuring adequate drainage. Perforation of the bronchus occurred only once in the course of 250 bronchoscopies. In contrast to the American point of view, the authors believe that collapse therapy is indicated in tracheobronchial tuberculosis for the control of bronchiectasis. Bronchoscopy does not spread the tuberculous process.

Policlinico (Sez. Prat.), Rome

53:813-822 (Sept. 30) 1946. **Partial Index**

*Vitamin B_1 in Treatment of Headache after Spinal Anesthesia. G. Bazzocchi.—p. 828.

Vitamin B_1 in Headache after Spinal Anesthesia.—Acute headache and rachialgia following spinal anesthesia were readily controlled by intravenous injection of 5 to 25 mg. of vitamin B_1. In the majority of the cases the injection was repeated in twelve or twenty-four hours on the reappearance of pain. The total number of injections varied from three to six in three days.

Día Médico, Buenos Aires

18:1437-1466 (Sept. 30) 1946. **Partial Index**

*Complication of Antirabic Vaccine. S. Zabludovich.—p. 1454.

Complication of Antirabic Vaccine.—A butcher was bitten by a pig when killing the animal. Antirabic vaccination was given by false alarm. Seven days after completion of the treatment the patient exhibited bilateral facial paralysis, inability to walk, anuria and acute symptoms simulating acute peritonitis. The successful treatment consisted in daily subcutaneous injections of sodium chloride and dextrose solutions in liberal quantities and daily intravenous injections of vitamin B_1 in doses of 100 mg. The acute symptoms were rapidly controlled. Vitamin B_1 therapy was continued up to a total dosage of 1,500 mg. in two weeks.

Revista Sudamericana de Morfol., Buenos Aires

4:1-992 (May) 1946. **Partial Index**

*Sclerogenic Cardiopathy Due to Avitaminosis B_1. A. E. Bianchi.—p. 1.

Sclerogenic Cardiopathy.—A man aged 37 with a history of avitaminosis B_1 showed symptoms of progressive heart failure, an x-ray shadow of an enlarged heart, acute hypotension and electrocardiographic signs of myocardial damage. Death occurred ten months from onset of the disease. The anatomic diagnosis was cardiac hypertrophy with dilatation, severe myocardial sclerosis and renal infarcts. Lesions were not found in any other organs. Microscopic examination revealed diffuse myocardial sclerosis of nonvascular origin, atrophic lesions of the muscle fibers, intense interstitial edema and mural thrombosis

overlying areas of very thickened endocardium. Bianchi believes these lesions were due to a vitamin B_1 (thiamine) deficiency and proposes the term "sclerogenic cardiopathy from avitaminosis B_1" to designate this entity of heart disease, which is rare.

Wiener klinische Wochenschrift, Vienna

58:557-572 (Sept. 27) 1946

Occurrence of Keratomalacia in Adults in Austria. A. Pillat.—p. 557.
Sarcoma of Vault of Cranium, with Special Consideration of So-Called Ewing's Sarcoma and of Reticulum Cell Lymphosarcoma. O. Wichtl. —p. 560.
Conservative and Surgical Treatment of Ulcus Cruris. L. Kumer. —p. 564.
Case of Primary Carcinoma of Bartholin's Gland. V. Grünberger. —p. 566.
*Wider Indication as to Temporary Elimination of Phrenic Nerve in Hemoptysis. E. Stangl.—p. 568.

Temporary Elimination of Phrenic Nerve in Hemoptysis.—Stangl performed phrenemphraxis in 125 cases of hemoptysis associated with pulmonary tuberculosis. Temporary elimination of the phrenic nerve is suggested for all cases in which usual treatment is ineffective and in which more extensive surgical intervention must be omitted for danger of death resulting from very poor general condition. Phrenemphraxis may also prevent the complications often associated with phrenic avulsion.

American Review of Soviet Medicine, New York

4:1-96 (Oct.) 1946

*Direct Electrocardiography of Heart During Restoration. S. V. Andreyev, E. I. Borisova and V. S. Rusinov.—p. 4.
Special Form of Virus Neuroinfection in Children. G. D. Leshchenko. —p. 7.
*Sleep in Treatment of Pain. S. D. Kaminski.—p. 13.
*Causalgia and Its Treatment. V. V. Zikeyev.—p. 16.
Posttraumatic Contractures. A. D. Speranski.—p. 22.
Autonomic Disturbances in Brain Injuries. I. S. Weinberg.—p. 25.
Pyramidal Syndrome. E. V. Shmidt.—p. 30.
Histology of Nerve Graft Four Months After Operation. I. K. Yesipova.—p. 37.
Motor Chronaxia During Blindfolding in Nerve Trauma. V. M. Vasilevski.—p. 40.
Sensory and Subsensory Responses from External Stimuli. G. V. Gersuni.—p. 44.
Nervous Stimulation and Cell Chemistry. C. S. Koshtoyants.—p. 45.
Combined Therapy in Schizophrenia. A. G. Ivanov-Smolenski.—p. 54.
Progress of Russian Psychiatry. A. O. Edelshtein.—p. 59.

Direct Electrocardiography in Restoration.—Andreyev and his co-workers carried out electrophysiologic experiments on 100 isolated hearts of children seven to thirty-six hours after the children had died from various infections. The hearts were perfused with a modified oxygenated Tyrode solution. The children were between the ages of several days and 4 years. Direct observation of the revived human heart by electrocardiography proved the presence of multiple foci of excitation in auricular fibrillation. It also established the actual form of activity occurring separately in the left and right ventricles of the human heart. This method should prove valuable in the investigation of many other conflicting problems in electrocardiography.

Sleep in Treatment of Pain.—Kaminski induced a prolonged state of sleep in patients suffering from severe pain that arose after injuries to the peripheral nerves of the upper and lower extremities. A mixture of evipal sodium, barbital sodium and procaine hydrochloride in glucose solution was administered internally in drops. After taking this mixture the patients slept from fifteen to eighteen hours out of every twenty-four. On the third or fourth day of the prolonged sleep the pain became less intense. In moderately severe cases intramuscular injections of evipal and barbital sodium were given into each buttock seven to eight times for one to two days and were combined with intravenous injections of procaine hydrochloride. The intense pain disappeared fourteen to eighteen days later. Relapses have not occurred.

Causalgia and Its Treatment.—Zikeyev induced prolonged sleep of 120 to 168 hours in 37 patients with causalgia following surgery of the nerve. Only 2 patients presented a mild type of causalgia, while the rest showed severe causalgia of long standing. All except 1 recovered. Between doses the patient may awake to a state of drowsiness. Fluids are then administered, and the bladder is emptied. During continued sound sleep, food and fluids are administered by a gastric tube and the bladder is catheterized. The body temperature of the patient is measured at one hour intervals. Pulse and respiration are carefully recorded.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

90:1104-1142 (Sept. 7) 1946. **Partial Index**

Intratracheal Anesthesia. L. D. Eerland.—p. 1113.
Multiple Myelomas, or Kahler's Disease. A. Bonebakker, L. W. van den Burg and F. de Wijn.—p. 1118.
Granulocytopenia After Aminothiazole Treatment for Thyrotoxicosis: Case. L. P. Kian.—p. 1122.
*Reduction of Number of Relapses in Patients with Malaria. C. W. F. Winckel.—p. 1124.

Reduction of Relapses in Malaria.—Winckel says that relapses have been rapid and frequent in regions of the Netherlands in which tertian malaria is endemic. About half of the patients have a relapse (parasitemia and fever) the same year or the year after adequate treatment with quinine. Earlier it had been noted that relapses were much less frequent when patients were treated with quinine and plasmochin than after treatment with quinine alone. When plasmochin was no longer available, recurrences became more frequent. To reduce the high incidence of relapses the author advises treatment with a mixture of quinine sulfate 750 to 900 mg. and pamaquine about 50 mg. daily for two weeks.

90:1235-1290 (Sept. 28) 1946

Nontuberculous Renal Abscesses and Pressure Points of Pasteau. H. R. van der Molen.—p. 1239.
Osteosclerotic Anemia. T. J. J. H. Meuwissen and C. J. A. Bakx. —p. 1245.
*Cysts and Tumors of Mediastinum. L. D. Eerland.—p. 1252.
Intrathoracic Neurogenic Tumors (Neurinoma, Ganglioneuroma). L. D. Eerland.—p. 1257.

Cysts and Tumors of Mediastinum.—Eerland discusses the symptomatology and differential diagnosis of the various types of cysts and tumors of the mediastinum and reports the histories of 2 patients on whom thoracotomy was performed because of a teratodermoid of the mediastinum. The author points out the necessity of performing thoracotomy in every case in which a complete examination does not give a definite diagnosis as to the nature of the shadow found on the roentgenogram.

Acta Medica Scandinavica, Stockholm

125:97-192 (Aug. 22) 1946

Tumors Caused by Virus. M. M. Newiadomski.—p. 97.
Thyrotoxicosis at Ulleval Hospital in Years 1934 to 1944, with Special View to Frequency of Disease. R. Grelland.—p. 108.
Total Bases in Serum on Dehydration. O. J. Broch.—p. 139.
Renal Threshold of Glucose: XII. G. Ekehorn.—p. 148.
*Attempts to Demonstrate Presence of Pressor Substance in Blood of Patients with Renal Hypertension. H. Kreutzfeldt.—p. 171.
Extensive Calcification in Heart at Early Age. F. S. P. van Buchem. —p. 182.

Pressor Substance in Blood of Patients with Renal Hypertension.—Kreutzfeldt employed isolated rabbit ears for various perfusion experiments. Preliminary experiments showed that the vessels of the ear react strongly to weak solutions of epinephrine but that quantitatively the vessels may react differently to the same concentration. The isolated rabbit ear may be considered a sensitive preparation for vasoconstrictive substances, but it cannot be used for quantitative measurement. Plasma and serum from rabbits, calves and man produced vasoconstriction when added to isotonic solution of three chlorides used as a perfusing medium in the isolated rabbit's ear. The degree of constriction proved only approximately proportionate to the concentration. Plasma from normal persons and plasma from patients with renal hypertension both caused vasoconstriction, and the effect of the plasma from patients with renal hypertension was no more pronounced than that of normal plasma. The author's experiments followed Page's method for demonstrating the presence of pressor substance in the blood of patients with renal hypertension except for using defibrinated blood of nephrectomized rabbits instead of dogs as the perfusing medium. The demonstration of the pressor substance in the blood failed, and Page's results were not verified because vasoconstrictive substances were present in both normal blood and that from patients with hypertension.

Book Notices

Atlas of Genitourinary Pathology. Prepared at the Army Institute of Pathology, Washington, D. C. from Material in the Registries of the American Urological Association by Nathan B. Friedman, Major, M. C., A. U. S., and J. E. Ash, Col., M. C., A. U. S. Cloth. Pp. 215, with illustrations. Washington, D. C., 1946.

This atlas follows the form of previous ones prepared at the Army Institute of Pathology for specialists. As the title implies, it does not represent a textbook but rather a pictorial panorama of the morbid processes in genitourinary diseases. The material which comprises this study includes that made available from the Tumor Registry of the American Urological Association as well as the immense amount of material which is available to the Institute from the Army. In such a compilation as an atlas it is impossible to present smooth, flowing accounts of disease processes such as would be possible in a monograph. The authors have attempted to show "that the morbid anatomy of the genito-urinary tract (is) a live and stimulating subject, which well repays study." They have succeeded in this endeavor.

There are several statements to which exception might be taken, however. On page 20 the authors state that 25 per cent of all women have "auxiliary glandular structures outside the muscular wall of the urethra which form the so-called female prostate." It would be exceedingly difficult to distinguish the glands in the accompanying photomicrograph from periurethral glands of Albarran. In the section on cysts of the kidney, mention is not made of peripelvic cysts. There is an excellent summary concerning the condition which has variously been called "crush" kidney or "transfusion" kidney. On page 76 a clear distinction is not made between squamous metaplasia of the epithelium of the renal pelvis and leukoplakia. Many urologists would not agree to the classification of testicular tumors, in which a division is made between seminoma of the testis and embryonal carcinoma of the testis. Most pathologists have regarded these two terms synonymous. Indeed, from the photomicrographs, it would seem that the authors are describing what has been generally regarded as a monocellular type of teratoma under the term embryonal carcinoma. The accompanying photographs are generally good. The photomicrographs utilizing higher magnification are excellent. Those with lower magnification are mediocre, and, in general, the gross photographs could be improved. The discussions and clinical data which accompany the illustrations are too abbreviated and fragmentary to be of much value. The atlas, however, serves as an excellent guide to the study of pathology of the genitourinary tract and contains much of practical value for any one interested in lesions of this region.

The Chest: A Handbook of Roentgen Diagnosis. By Leo G. Rigler, M.D., Professor and Chief, Department of Radiology, University of Minnesota, Minneapolis. Cloth. Price, $6.50. Pp. 352, with illustrations. The Year Book Publishers, Inc., 304 S. Dearborn St., Chicago 4, 1946.

This treatise is a compact, well organized review of the roentgen diagnosis of diseases of the chest. The format is arranged for easy reading, and the descriptions are clear and concise without excess verbiage.

It is introduced by a pertinent section which orients the reader as to the importance and value of roentgenologic studies of the chest and indicates the attendant difficulties of the interpretation. A description of the methods of examination used in roentgenography and roentgenoscopy is included in this handbook together with a review of the special devices (body section roentgenography, photofluorography) and methods (bronchography) utilized in roentgen ray examination of the chest. There is included in this book not only diseases of the lung but of the mediastinum, the pleura and the chest wall. A particularly useful section is that devoted to the normal roentgen findings of the chest and their variations.

The reproductions of the roentgenograms are excellent, and the arrangement is such that easy reference to the descriptions in the text is possible. The cases presented are authoritative and convincing, since nearly all the conditions which are described are those in established, proved cases.

The book is particularly useful to physicians other than radiologists who have need for ready reference to the roentgenologic observations and changes in diseases of the chest and to a discussion of the differential diagnoses. It also serves as an excellent review for radiologists because of its complete survey of the various pathologic entities likely to be encountered in the roentgen ray examination of the chest.

Although this book is an exceedingly useful reference, it was not intended and should not be considered as a source book or compendium of all the available information in the roentgenologic aspects of diseases of the chest.

This is one of the best books in the handbook series on roentgen diagnosis.

Lehrbuch der Physiologie in 33 Vorlesungen. Von Emil Abderhalden, Professor an der Universität Zürich. Tenth-Twelfth edition. Cloth. Price, 34 Swiss francs. Pp. 480, with 235 illustrations. Benno Schwabe & Co., Klosterberg 27, Basel 10, 1946.

One of the reviewer's favorite criticisms of text books of physiology is that each author applies his own conception of the sequence and proportion of subject matter. Out of the total of 458 pages in this book, secretion and alimentary function occupy 41 pages, blood 32, circulation and respiration 79, kidney 13, sensorium and special senses 165, motorium 18 and neurophysiology 107. This suggests a serious imbalance as well as an illogical interrelation of functions. This is regrettable in a text enjoying the prestige which this one does. From a practical point of view there are many subjects so sketchily treated that one can scarcely find any concrete factual information. The illustrations are well integrated, and many of them appear to be original. There is no specialized treatment of the physiology of nutrition, endocrines, reproduction or growth. The long list of references to original work is almost valueless because of the incompleteness of the references. The book is of value because of the author's own analysis of scientific data but is certainly not to be recommended very highly as a text for student use.

A Textbook of Clinical Neurology. By J. M. Nielsen, B.S., M.D., F.A.C.P., Associate Clinical Professor of Medicine (Neurology), University of Southern California, Los Angeles. Second edition. Cloth. Price, $7.50. Pp. 699, with 190 illustrations. Paul B. Hoeber, Inc., 49 East 33rd St., New York 16, 1946.

This is the second edition of a good textbook in neurology for medical students. It has been revised and contains many more entities with full descriptions than did the first edition. The book is valuable primarily because the material in it is presented in relation to anatomic localization. This is one of the most practical and easily understood methods of a teaching textbook in neurology. The illustrations are excellent. Aphasia, apraxia and agnosia receive excellent discussions. The author speaks of a dietetic management in the epilepsies with restriction of water intake. There has been considerable controlled research in regard to diet and water intake, and no relationship or correlation was found in regard to epilepsy. There are other controversial points in the text, but they are minor and do not in any way detract from the value of this book to medical students. It is highly recommended.

Psychiatry Today and Tomorrow. By Samuel Zachary Orgel, M.D., F.A.P.A., Attending Psychiatrist, Hillside Hospital, Bellerose, L. I. Cloth. Price, $6. Pp. 514. International Universities Press, 227 W. 13th St., New York, 1946

This is a new work which reflects the throes of transition which psychiatry is currently suffering as it evolves from its mystical and classificatory phases into a truly scientific medical specialty.

On the one hand Orgel clings to the outmoded Kraepelinian systems of stratifying "mental diseases"; on the other, he strives for a dynamic understanding and presentation of the aims, adaptations and vicissitudes of human behavior. In the latter respect his translation of orthodox psychoanalytic mythology into meaningful etiologic concepts is often apt, although in his attempts to achieve simplicity and clarity Orgel's exposition occasionally becomes sophomoric. Thus on page 51 he says "Freud has used [the Oedipus complex] to describe a normal situation occurring in every one's life, which the Oedipus myth describes so graphically, emphasizing the abnormal solution with the resultant penalty. As you look back upon this newborn 'omnipotent' child you will find that his complete dependence on his mother must persist for a long time if he is not to perish. He is jealous of [his siblings] because of their demands upon mother and wishes them out of the way, which is identical to dead. The boy hates [his father] as a rival when father acts the part of rightful owner of mother, when he takes mother away, goes out with her, treats her as his property, and insists on sleeping with her. The child turns away from mother and tries to satisfy his need for love on himself—he becomes autoerotic."

The intent of such passages is clear: the deviated patterns of behavior are not in themselves disease entities nor the expression of mystical "complexes"; instead, all behavior, normal and "abnormal," is the resultant of an interplay of endowment, experience and individual adaptation.

While Orgel does not explicitly expand this modern dynamic approach to psychiatry, his survey of the field is sufficiently broad to encompass some of its applications to criminology, social work and the cultural problems of mental hygiene. The book is recommended to medical students and practitioners.

Les yeux et la vision des vertébrés. Par A. Rochon-Duvigneaud. Paper. Pp. 719, with 500 illustrations. Masson et Cie, 120 Boulevard Saint-Germain, Paris 6^{e}, 1943

This book is an extensive description of comparative anatomy, histology, physiology and embryology of the eye. Starting with a thorough study of the human eye, the author passes in review the visual organ throughout the manifold classes of the Vertebrates, stressing the specific data for every group, in the structure of the eyeball and the visual function.

Of the immense amount of material in this textbook a few hints of the facts and conclusions are as follows: The ocular tension is very low in the group of the fishes, but is comparable to that of the human eye for all the aerial vertebrates. The canal of Schlemm, missing in the series of the fishes, exists in all aerial vertebrates.

The pupillary reaction, exclusively reflex and unilateral in the groups of the fishes, crocodiles, lizards, snakes and birds, starts definitely to be consensual in the eye of the cat and the dog, although here the reaction of the nonilluminated eye is always weaker. The consensual reaction is 100 per cent—that means equal for the illuminated and the nonilluminated eye—only in the group of the Primates.

As a matter of fact the division in inferior and superior vertebrates is genuine also, as far as the visual apparatus is concerned. The inferior Vertebrates, up to and including the birds, present visual and motor independence of the eyeballs. Only the mammals have conjugated eyes and the foveal binocular vision exists in the eyes of the apes and man. This statement is mainly based on anatomic observations (total chiasm and crossed chiasmal fibers). Naturally, functional testing of the apes appears uncertain.

The volume, well printed, well organized and exquisitely illustrated, is of great value to the ophthalmologist who is interested in the field of comparative anatomy and physiology of the eye; it is undoubtedly a vital addition to any study of zoology. Published in the war period, it is all the more remarkable that this excellent work of a distinguished ophthalmologist and an authoritative zoologist could appear at all under such difficult circumstances.

The Treatment of Bronchial Asthma. By Vincent J. Derbes, M.D., Instructor in Medicine and in Preventive Medicine, Tulane University of Louisiana School of Medicine, New Orleans, and Hugo Tristram Engelhardt, M.D., F.A.C.P., Instructor in Clinical Medicine, Baylor University College of Medicine, Houston, Texas. With Chapters by a Panel of Contributors. Cloth. Price, $8. Pp. 466, with 61 illustrations. J. B. Lippincott Company, 227-231 S. 6th St., Philadelphia 5; Aldine House, 10-13 Bedford St., London W. C. 2; 2083 Guy St., Montreal, 1946.

This treatise on bronchial asthma owes its general excellence to the authoritative points of view of its many contributors. In twenty-three chapters all important aspects of this widespread disease are carefully covered, including the discussion of its predisposing, contributing and exciting factors, and its pathology, immunology, symptomatology and treatment. Worthy of special mention are the chapters on the role of foods by F. W. Wittich, on differential diagnosis by W. W. Sodeman and on nonallergic treatment by J. S. La Due. A comprehensive statistical survey was provided by L. I. Dublin and J. H. Marks. A broad physiologic point of view is maintained throughout, and a few inconsistencies in emphasis from chapter to chapter merely reflect the individual stands of the contributors. The chapter on parasitic agents in the causation of asthma wanders rather far afield from its title. The detailed descriptions and numerous illustrations of surgical treatments does not leave the reader with the impression that these are, as yet, in a strictly investigative stage. One may question whether the inclusion of a complete chapter, however excellent, on cardiac asthma might not confuse the uninitiated in regard to the relationship of this disease to bronchial asthma.

On page 164 errors in conversion of decimals to fractions occur, while on page 174 and following pages the ragweeds are accorded the status of a botanic family, contrary to current opinion. Although the iontophoretic test is dismissed in less than one sentence, an illustration is devoted to it (page 149). Many allergists will question the advisability of employing the strongest extract first when "titrating" individual sensitivity (page 359) for fear of untoward reactions; the feasibility of maintaining coseasonal pollen treatment at intervals as long as five to seven days, and the relative tolerance of most pollen-sensitive patients for maximum single doses of 20,000 pollen units (page 361 and following). No mention of the new antihistaminic agents or of aerosol penicillin is found.

These are, however, only minor criticisms. Undoubtedly, the book will prove a valuable source of information and guidance to those faced with the problems of the management of this troublesome disease.

Allergy in Practice. By Samuel M. Feinberg, M.D., Associate Professor of Medicine and Chief of the Division of Allergy, Northwestern University Medical School, Chicago. With the collaboration of Oren C. Durham, Chief Botanist, Abbott Laboratories, North Chicago, Illinois, and Carl A. Dragstedt, Ph.D., M.D., Professor and Chairman of the Department of Pharmacology, Northwestern University Medical School, Chicago. Second edition Cloth. Price, $10.50. Pp. 838, with 35 illustrations. The Year Book Publishers, Inc., 304 S. Dearborn St., Chicago 4, 1946.

This is a second edition of a book which first appeared in 1944. It contains many additions which help to make the book one of the best published on the subject of allergy. The book consists of thirty chapters dealing with all phases of anaphylaxis and allergy, These chapters cover completely all clinical and theoretic considerations and include an up to date bibliography on each subject.

This revised edition contains a chapter on pollens and pollen allergy. This constitutes the most complete and thorough treatment of the subject of pollens in connection with allergy. It includes an up to date account of the pollen surveys in the entire world, and newer methods of pollen counting and pollen standards are published for the first time in a book.

A valuable contribution is the chapter which covers all conditions of allied allergy, such as rheumatic fever, periarteritis nodosa, acute disseminated lupus erythematosus, Löffler's syndrome and tropical eosinophilia. These are discussed competently and in detail, and their relation to allergy is clearly brought out.

A chapter on the role of histamine in anaphylaxis and allergy by Dr. Carl A. Dragstedt offers a concise account of the subject by one who has been an outstanding experimenter and authority in that field.

This book also contains a chapter which deals with newer drugs which can be grouped as histamine antagonists (benadryl and pyribenzamine). This should be of extreme clinical interest to all those who are called on to use these drugs for the treatment of allergic disorders.

The chapter on mold allergy is extensive. It is based on a rather wide personal experience which the author has had in this field.

As was stated before, this book is probably one of the finest available books on the subject of allergy.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

EXERCISES FOR PALATE AFTER BULBAR POLIOMYELITIS

To the Editor:—In recent years there has been considerable progress in retraining of muscles after anterior poliomyelitis has left residual paralysis. However, the work done seems to be confined to extremities that have lost function. Has any rehabilitation work been done with patients who have had bulbar poliomyelitis with cranial nerve involvement? A young woman with history, physical signs and laboratory findings of bulbar poliomyelitis is now convalescent, with slight difficulty in swallowing, nasal twang in speech and deviation of the uvula to the left. Neurologic examination is otherwise negative. At the height of illness there was regurgitation through the nose and severe slurring of speech. Completely normal function of the palate may possibly return in three months, but meanwhile are there any voice or speech exercises the patient may do in hope of augmenting or speeding the restoration of function?

M.D., Iowa.

Answer.—It is correct to assume that most patients with bulbar involvement recover completely, particularly as regards swallowing and speech. Facial nerve involvement is more likely to persist, although the prognosis is good. Certainly, exercises are helpful. The exercises for the soft palate should direct particular attention to the side away from which the uvula is deviated. Like other muscle training following poliomyelitis it should be started before a faulty pattern becomes habitual and should be practiced regularly, preferably more than once a day. Certain representative exercises might be listed:

1. Yawn to the point of feeling a stretch as the soft palate is elevated. The patient should look into a mirror and make an effort to arch the lower side of the soft palate and pull the uvula over toward the center, the tongue being held down.

2. If this is not successful, the sagging region may be stimulated gently with a tongue depressor.

3. Make the sound *a* while looking in the mirror and keeping the soft palate elevated (the *a* sound is nasal when the soft palate sags).

4. Protrude the tongue slightly and curl it up at the end, then retract it strongly, making pressure along the alveolar ridge as it is drawn back. This tends to stimulate the swallowing reflex.

Weakness of the muscles of the lower jaw and failure to masticate the food properly may contribute to the difficulty in swallowing. Chewing motions and lateral movements of the jaw will then be helpful. If lack of breath pressure reduces the volume of tone, breathing exercises should be practiced with emphasis on blowing out.

If the facial muscles also are involved, the weakened movements may be practiced before a mirror, gentle assistance being given by the patient's own finger in moving the lips or cheek to the position corresponding to that on the other side of the face. Laughing and crying make the pull toward the stronger side more noticeable.

Additional exercises for the pronunciation of certain letters and sounds may be found in "The Rehabilitation of Speech" by West, Kennedy and Carr, published by Harper & Brothers.

CAUSE AND TREATMENT OF VERTIGO

To the Editor:—What is the physiologic basis of vertigo? A patient has had vertigo for two months following a minor head injury and a mild cerebral concussion. Please discuss treatment.

H. B. Taylor, M.D., Berea, Ky.

Answer.—True vertigo with a definite sense of rotation is always due to pathologic change in the vestibular mechanism of the peripheral ear or in the central pathways of the vestibular nerve in the pons or cerebellum. Dizziness consisting of lightheadedness or faintness, without a definite systematized sense of rotation, is generaly due to disturbed cerebral circulation and occurs in hypertension, hypotension, arteriosclerosis, anemia, reflex vagal slowing of the heart and many other conditions.

Dizziness following head injury or concussion is generally of the vascular type rather than a true vestibular vertigo. Histamine in extremely dilute doses sometimes hastens recovery from the prolonged symptoms following concussion. The histamine solution should be given subcutaneously in 1:100,000,000 dilution, 0.1 cc. every four days. If there is no improvement after three or four injections it should be discontinued. If there is improvement it may be continued as required.

OSTEOGENESIS IMPERFECTA

To the Editor:—A boy aged 2 years has had nine spontaneous fractures since the age of 6 weeks. Usually the long bones have been involved, and the fractures unite promptly without excess callus formation. All blood studies have been negative, the most recent showing phosphorus 2.8 mg. and calcium 11 mg. per hundred cubic centimeters and the blood Wassermann reaction negative. The father of the child is unknown; the mother is free of syphilis and has had no other children. The child is rather large for his age and well nourished. He has been given a properly balanced diet including a good quantity of milk and cod liver oil. X-rays have not revealed any abnormalities, except that at the time of the first fracture there was some softening of the skull, which promptly cleared up following an increase in dosage of cod liver oil. I do not think that this is a case of Albers-Schönberg disease (marble bone disease) because of the normal blood findings and the fact that the fractures heal without excess callus formation. Please discuss the diagnosis and treatment.

M.D., Maryland.

Answer.—From the description in the query, a diagnosis of fragilitas ossium or osteogenesis imperfecta is suggested. Mention is not made of the China blue sclera, broad skull, rather pinched features and triangular face which are seen in those cases. The description given in the query does not suggest marble bone. The phosphorus is slightly low, but the calcium is normal. Endocrine therapy such as thyroid, parathyroid and thymus has been unsuccessful in these cases. Beyond good general care and food, fresh air and other hygiene measures there is not much one can do. In fragilitas ossium or osteogenesis imperfecta there is a tendency for fractures to be easily sustained up to the age of puberty. After puberty the tendency is for the bones to become more solid and for fewer fractures to occur.

FOUNDER AND GOUT

To the Editor:—In a recent article in the *Saturday Evening Post* the statement was made that founder, a disease of horses, bears a resemblance to human gout. Although uric acid gout affects birds, and guanine gout pigs, I have not seen references to gout in horses. If the author's statement is correct and there is a resemblance to human gout, in what does this similarity consist besides the locus affected? Do horses with founder have hyperuricemia, tophi, acute articular attacks and radiologic changes? Is the disease limited to a particular group of horses, for example, thoroughbreds?

M.D., Illinois.

Answer.—Gout does not affect horses, and founder in horses does not resemble human gout except that it affects the foot or feet of horses and commonly follows overeating.

Founder, or laminitis, is a disease of the fleshy laminas of the horse's feet, producing severe pain and fever. It does not affect a special breed of horses or feet of any special construction. The cause of the disease is a matter of speculation. The most common cause is believed to be heavy overfeeding, chiefly of grains (barley, wheat or corn) and also of green plants. Other supposed causes are metritis in recently foaled mares, long-continued work or excess work on hard pavements.

IMMUNIZATIONS FOR KENYA COLONY

To the Editor:—A patient expects to visit Kenya Colony, British East Africa, on a big game hunting expedition. What diseases are prevalent in this area? What immunizations are advised? Where can this immunizing material be obtained?

Donald G. Mershon, M.D., Chicago.

Answer.—The infectious diseases now prevalent in Kenya are smallpox, typhoid, louse borne relapsing fever, amebic and bacillary dysentery, cerebrospinal meningitis and malaria. Plague and tick typhus occur sporadically. On the basis that yellow fever is present, though rare in man, Kenya has been officially declared to be within the yellow fever endemic area by UNRRA under international sanitary conventions. The person going to Kenya should definitely be immunized against smallpox, yellow fever and typhoid. The decision regarding tetanus immunization depends as elsewhere on the risk of accident and should be left to the judgment of the physician. In the Chicago area, vaccination against yellow fever is performed at the outpatient clinic of the U. S. Public Health Service, 4141 Clarendon Avenue, Chicago, at times determined in advance by telephone. The other vaccines are available through commercial channels.

RIBOFLAVIN ALLERGY

To the Editor:—A white woman aged 50 complained of symptoms typical of ocular riboflavin deficiency and had a dietary history which confirmed this tentative diagnosis. The patient stated that she was not able to drink milk. Five mg. of riboflavin by mouth daily was prescribed. However, her family physician said the patient was allergic to riboflavin. What is the incidence of allergy to riboflavin?

M.D., Ohio.

Answer.—Reports of allergic reactions to riboflavin have not been found.

RENAL GLYCOSURIA

To the Editor:—A patient wishes to marry a girl who gives a history of renal diabetes. During a routine examination this girl was found to have 3 to 4 per cent sugar in the urine and a normal glucose value in the serum. A glucose tolerance test was normal, the values rising to 145 mg. per hundred cubic centimeters and reaching 80 mg. per hundred cubic centimeters again after one and one half hours. The renal threshold for glucose was about 130 mg. per hundred cubic centimeters. A kidney function test was normal. What is the life expectancy of renal diabetic patients and what is the prognosis? Frank Matthias, M.D., New York.

ANSWER.—Renal glycosuria is a benign condition in which, because of a renal threshold for sugar lower than the average normal, glucose appears in the urine at levels of blood sugar lower than 160 to 180 mg. per hundred cubic centimeters. It has no relation to diabetes mellitus, although certain patients with diabetes may have a renal threshold lower than the average normal just as individuals without diabetes do. Although over a period of years there has been some controversy in the literature, the general consensus now is that the prognosis is excellent and that the patient with renal glycosuria has a normal life expectancy.

This statement takes for granted that the diagnosis of renal glycosuria has been made with care. Care must be taken to exclude patients with borderline glucose tolerance curves who might be classified more accurately as having "potential diabetes." To avoid pitfalls such as this, certain physicians have insisted that, before the diagnosis of renal glycosuria is made, an arbitrarily chosen period of three years must elapse during which the patient is kept under observation. Furthermore, some workers make the diagnosis of renal glycosuria only in those persons in whom the renal threshold for sugar is lowered and in whom sugar appears in the urine even in the fasting state, i. e., in the presence of a blood sugar of about 100 mg. per hundred cubic centimeters or below.

It is obvious that if a large enough group of persons with renal glycosuria is followed over a sufficient number of years, a certain small percentage will develop diabetes just as one would find in any similar group of people selected at random. This however cannot be taken to indicate that renal glycosuria bears any relation to diabetes or is apt to progress to diabetes.

EFFECT OF PAPER DUST

To the Editor:—Pulmonary x-ray studies of a man aged 50 demonstrate typical pneumonoconiosis with severe and extensive bilateral fibrosis and nodular masses in the left hilus. The patient worked in the paper industry for twelve years, where he was exposed to large concentrations of paper dust engendered in cutting paper. What is the nature of paper dust and what is its effect on the lungs? George C. Coe, M.D., Chicago.

ANSWER.—If the x-ray pattern is characteristic of a pneumonoconiosis and other disease can be ruled out, it is essential to make certain that there was no previous employment that might involve exposure to dust. If this can be established, it would then be necessary to investigate the atmospheric environment in the paper cutting operation. It seems improbable that this procedure would produce fragments of paper small enough to be inhaled. However, the paper might be coated with sizing, pigments or other substances that could produce inhalable dust. One should also investigate any other operations in the vicinity of the paper cutting operation that could give rise to atmospheric contamination. An analysis of settled dust or air floating dust from the vicinity of the patient's last job is advised to establish particle size, as well as physical, chemical and mineralogical characteristics.

INTERNAL CONTROL KNEE PROSTHESES

To the Editor:—A middle aged rather heavy set woman has had an amputation of the left leg 2 inches above the knee joint. She cannot use her artificial leg satisfactorily although she has had it for two years. She walks awkwardly with a cane. Since she is a school teacher, more freedom of movement is desired. Is this amount of stump too long for inside controls? M.D., Oklahoma.

ANSWER.—If the amputation described in the query is approximately 2 inches from the distal articular surface of the femur, it is through the cancellous flare of the bone. A good stump of this length is frequently fitted with a partial end-bearing prosthesis that carries part of the body weight on the end of the stump, the remainder being distributed up the thigh and on the pelvis. A stump such as described is usually too long to permit the use of a full size mechanical knee.

The value to the patient of the internal control knees now available is questionable. The most important factor is to have the knee joint hinges properly placed, and to have adjustable friction in the joints or knee mechanism.

A great deal of research in the development of better artificial limbs is being carried out in several locations under the supervision of the Committee on Prosthetic Devices of the National Research Council. Improvements are being developed for all types of prostheses, but they will not be commercially available until they have been tried thoroughly and released for production.

The success of an artificial limb depends to a large extent on the physical agility and mental attitude of the patient. A good reference is the recent publication Amputation Prosthesis, by Atha Thomas and Chester C. Haddan (Philadelphia, London and Montreal, J. B. Lippincott Company, 1946).

ADMINISTRATION OF PENICILLIN AFTER PENICILLIN SENSITIZATION

To the Editor:—If a true serum reaction occurs a few days after the last injection of a course of penicillin, is it safe to give penicillin again later if necessary? M.D., Kansas.

ANSWER.—It is possible to give penicillin a second time to patients who have become sensitized to it, provided it is done with care. A small trial dose should be used to determine whether or not the patient is still sensitive. In some instances the sensitivity to penicillin will decrease over a period of six months to a year so that a second course may be given without reaction. In other instances penicillin may be used a much shorter time after the first reaction without difficulty. In any event, once a patient has become sensitized to penicillin it is always well to test with a small single injection before starting a second course.

NONOPERATIVE TREATMENT OF FISTULA IN ANO

To the Editor:—Please discuss the nonoperative treatment of fistula in ano (nontuberculous). The use of penicillin in sodium morrhuate has been described to treat pilonidal cysts (*New York State J. Med.* **46**:891, [April 15] 1946). Has this technic been used to treat fistula in ano? M.D., New York.

ANSWER.—In fistula in ano there is a break in the lining of the bowel. When a patient has diarrhea or a forceful constipated movement, there is likely to be contamination with stool, with a consequent reinfection of the tract. The lining of a chronically inflamed tract is firm scar tissue, and it is common knowledge that healing often occurs for long periods only to break down after an episode of diarrhea or constipation. No doubt treatment with penicillin might cause such a remission, but the mechanical fixation of the bowel to the tract predisposes to another tear. Surgical treatment offers a good chance of permanent cure, whereas a lightly healed scar is a constant threat of more trouble.

SULFONAMIDE SENSITIVITY

To the Editor:—What is the proper method to desensitize a registered nurse who is allergic to sulfonamide drugs even to the point of caring for patients under sulfonamide treatment? Milton P. Graham, M.D., Aberdeen, Wash.

ANSWER.—It is assumed that the nurse is sensitive to more than one sulfonamide. The degree of sensitivity manifested is most unusual. It would be important to know what the manifestations of hypersensitivity are before recommending any method of desensitization. Methods of desensitization include the oral administration of small doses of a sulfonamide and then increasing the doses gradually. Another method involves the subcutaneous injection of minute doses of a sulfonamide initially and then increasing the doses carefully. Any approach to this problem is time consuming and not without danger. Sensitivity to sulfonamides may endure for years.

CARCINOGENS

To the Editor:—What dose of 20-methylcholanthrene is used to produce skin cancer in mice, rats and rabbits? Where can 20-methylcholanthrene be purchased? Manuel D. Navarro, M.D., Manila, Philippines.

ANSWER.—There are many doses and methods of applying 20-methylcholanthrene to produce cancer in mice, rats and rabbits. An excellent review of the problem is given in "Survey of Compounds Which Have Been Tested for Carcinogenic Activity" by J. L. Hartwell, 1941. This is a publication of the National Cancer Institute, Bethesda, Md.

Any of the large drug companies either will be able to provide methylcholanthrene or can direct the applicant to a satisfactory source of this material.

ENDOMETRIOSIS AND PREGNANCY

To the Editor:—A secundipara, aged 27 is now three months pregnant and has, in addition to her pregnancy, several polypoid masses of tissue which are growing into the vagina from the left posterior surface of the cervix. Five months ago a similar tumor was removed from that area and subjected to microscopic examination. This was reported as showing "fairly numerous alveoli surrounded by a loose cellular stroma which resembles islands of endometrium, although the picture is not typical. Diagnosis, extensive chronic cervicitis, possible endometriosis (not definite)." Because the patient was anxious to have a child if possible, radical treatment was not instituted at that time. With the advent of this pregnancy the apparent endometriosis has been growing luxuriantly, and bleeding occurs on the lightest sponging. There is no evidence of any infiltration in the rectovaginal septum. I have been unable to find any information regarding the course of endometriosis under the influence of pregnancy. Moreover, the textbooks state that these patients are usually sterile. I wonder whether to treat this patient conservatively, to attempt to remove the vaginal tumors by cautery or the application of radium, whether to contemplate a vaginal delivery or, because of a likelihood of a serious hemorrhage when the cervix begins to efface and dilate, perform an elective cesarean section. Theoretically, if a cesarean section is performed the ovaries should be removed in order to inactivate the ectopic endometrium. Any suggestions based on the experiences of others with endometriosis during pregnancy would be appreciated.

T. A. Strang, M.D., Long Beach, Calif.

Answer.—It is true that at least 50 per cent of women who are operated on for endometriosis have never had a baby. It appears incongruous to consider the likelihood of a pregnancy in the presence of endometriosis, yet there have been reports of pregnancies associated with endometriosis. The pregnancy may take place in the presence of either internal endometriosis (adenomyosis or adenomyoma) or external endometriosis. In most of the 12 reported cases of internal endometriosis the indication for operation was considered to be a fibromyomatous uterus. In 5 cases there was a rupture of the uterus, and endometriosis was found at the site of the rupture. There was atony of the uterus and postpartum hemorrhage in 3 cases. An adenomyoma caused dystocia during labor in 2 cases, necessitating delivery by cesarean section.

The most common sites of external endometriosis complicating gestation are the rectovaginal septum and the ovarian regions. There are reports of 11 cases of the former type and 7 of the latter. In the rectovaginal type the symptoms usually resembled those of threatened or inevitable abortion. The correct diagnosis was made by specular examination together with biopsy confirmation. This type of endometriosis usually increased up to the fourth month of pregnancy and then retrogressed in size until term.

There are reports of 2 cases of cervical endometriosis. For a description of these cases as well as a complete review of the subject of endometriosis associated with pregnancy and an extensive bibliography see Scott, R. B.: Endometriosis and Pregnancy, with a Report of 2 Cases, *Am. J. Obst. & Gynec.* **47**:608 (May) 1944.

In a case like that cited it is best to pursue a conservative policy during pregnancy. If bleeding is troublesome, the polypoid masses should be destroyed with the electric cautery. If this case follows the pattern of most of the reported cases of rectovaginal endometriosis, the masses will regress in size after the fourth month. Radium should not be used both because it is unnecessary and because it may do harm to the fetus. Since there may be endometriosis in the pelvic cavity, because of the danger of rupture of the uterus, postpartum hemorrhage and dystocia it may be advisable to perform an elective cesarean section on the patient near term. After delivery of the baby the ovaries, broad ligaments and cul-de-sac should be carefully inspected. If endometriosis is present, as much of it as possible should be removed; but one ovary or at least a part of an ovary should be left in situ. This should be done on nearly all young women even though a second operation or x-ray castration may have to be carried out later. In some cases in which an ovary cannot be left in situ it is advisable to implant thin pieces of healthy ovarian tissue in the omentum or in the abdominal wall.

PIGMENTATION AFTER BURNS

To the Editor:—A patient received a first degree burn of the lower part of the leg from boiling water that splashed through a nylon stocking. There is now a discolored area at the site of the burn which appears to be permanent and similar to a tattoo. Have other cases been reported?

G. C. Scanlan, M.D., De Witt, Iowa.

Answer.—Burns frequently result in temporary pigmentation of the skin. Such discoloration lasts longer on the lower extremities and sometimes remains permanently. This pigmentation is due to melanin and not necessarily materials deposited in the skin from without. Ammoniated mercury ointment in a concentration of 1 to 3 per cent used cautiously over a prolonged interval may be useful for removing some of the pigment.

PERSISTENT VAGINAL DISCHARGE IN CHILD

To the Editor:—A girl aged 5 years has a history of a possible insertion of a foreign body into the vagina about June 15, 1945. Since that time she has had periodic exacerbations of mucoid and mucoserous discharge with evidence of external vaginitis. Numerous cultures have shown the presence of nonhemolytic Staphylococcus aureus and Escherichia coli. X-ray studies have been negative on two occasions. Examination under anesthesia showed absence of a foreign body. Therapy has consisted of penicillin solution, penicillin ointment and Aci—fel (to change the ph of the vaginal mucosa). The treatment was successful each time, but each time after the treatment was stopped there was a recurrence. Escherichia coli was at first thought to be a contaminant but is now considered to be pathogenic. Please discuss further diagnostic measures and treatment.

M.D., New York.

Answer.—The x-ray studies and examination under anesthesia almost certainly have ruled out the presence of a foreign body. However, it is conceivable that a small, soft, foreign body, such as a wad of cotton, may still be present. If a rectal examination was not made while the child was under the anesthetic it should be done now, and if the vagina was not inspected through a urethroscope or similar instrument this too should be done.

In the majority of instances vaginal discharges in infants and young children disappear spontaneously even without treatment. This statement is true of gonorrheal vulvovaginitis as well as of nongonorrheal infections. This child has had considerable treatment. It would be wise now to stop all treatment except the use of ordinary soap and water cleansing of the external genitals and perhaps a bland ointment. If there is any itching, an antipruritic may be included in the ointment.

TINNITUS AURIUM

To the Editor:—Are there any recent developments in the treatment of the annoying symptom of tinnitus aurium associated with mild perceptive deafness especially common in patients past middle age?

M.D., Iowa.

Answer.—The exact mechanism of tinnitus is unknown except that it is frequently associated with impaired hearing. In some cases of otosclerosis, tinnitus has improved or been relieved by the fenestration operation. There was no other known treatment for tinnitus until the recent suggestion that the sympathetic plexus on the median wall of the promontory be removed for this symptom. The operation of tympanosympathectomy has proved successful in a few cases of unbearably severe unilateral tinnitus. In other cases the operation has been unsuccessful. The exact indications and results are not yet known. The original article by Julius Lempert describing this procedure appeared in the *Archives of Otolaryngology* **43**:199 (March) 1946.

EFFECT OF BROWN FAT EXTRACTS ON METABOLISM

To the Editor:—In the Queries and Minor Notes section of The Journal, Jan. 27, 1945 the statement appeared that extracts of the "brown fatty tissue" of the interscapular region produced a drop in metabolism of 20 to 30 per cent when injected into rats. What is the source of this information?

M.D., Ontario.

Answer.—The statement concerning the effect of the "brown fatty tissue" on metabolism was based on a note by C. F. Wendt (Ueber Wirkungen eines extraktes aus dem braunen Fettgewebe des winterschlafenden Igels: IV. *Ztschr. f. physiol. Chem.* **249**: 182IV, 1937). It should be added that the lowering of the basal metabolic rates in rats was accompanied with a state of depression, and almost anything that causes a state of depression will do that. For further references see chapter XXXI of Sleep and Wakefulness, by Nathaniel Kleitman (University of Chicago Press, 1939).

CIRCUMCISION OF THE NEWBORN

To the Editor:—The reply to the query on "Circumcision of Newborn" in The Journal, Nov. 9, 1946, does justice to the advisability of doing such a procedure. However, the statement that hemorrhage in the newborn should not be feared unless the baby is suffering from some blood dyscrasia is not correct. On page 102 in the eleventh edition of Holt and McIntosh, the authors state, "it is now clear that a latent hemorrhagic tendency is present in all newborn infants and that hemorrhages will develop in the presence of minimal trauma." Thus every newborn infant should be regarded as having a temporary bleeding tendency. Such a tendency, which is associated with an actual deficiency of prothrombin as well as a possible disruption in the conversion of prothrombin to thrombin, is prevented either by the administration of vitamin K to the mother a few hours before delivery or by the direct administration of vitamin K parenterally to the child after delivery. This hemorrhagic state usually ceases by the fifth to the seventh day, probably as the result of the intestinal production of vitamin K by bacterial action. Therefore it is advisable to perform circumcisions at the end of the first week or later rather than at the time of delivery. If this operation should be undertaken at the earlier time, vitamin K should be administered prophylactically and readministered in case of oozing from the operative site.

Martin C. Rosenthal, M.D., New York.

The Journal of the
American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 133, No. 7 CHICAGO, ILLINOIS February 15, 1947

Copyright, 1947, by American Medical Association

CLINICAL SIGNS OF DIAGNOSTIC IMPORTANCE IN CONJUNCTIVITIS

PHILLIPS THYGESON, M.D.
San Jose, Calif.

There has been increasing recognition of the importance of a causal diagnosis in conjunctivitis in recent years, due no doubt to the fact that specific chemotherapy has been made available for a number of important types of the disease. In addition to its value as a guide to therapy, causal determination is important for prognosis, since it is obviously often of great value to be able to predict accurately the clinical course and outcome of a conjunctival infection.

In routine office practice facilities for bacteriologic and pathologic examination are frequently not available, and advantage must therefore be taken of such causal indications as can be obtained from careful gross and slit lamp examination of the conjunctiva and the contiguous structures. It is not generally recognized that reliable differentiation of many of the major types of conjunctivitis can be made on clinical examination alone, independently of laboratory observations. The following report discusses these clinical observations and their diagnostic significance.

THE DIAGNOSTIC VALUE OF PREAURICULAR ADENOPATHY

Enlargement of the preauricular lymph nodes which drain the conjunctiva is almost unknown in catarrhal or purulent conjunctivitis of bacterial origin, although transient swelling of the nodes is occasionally seen in severe hordeola, particularly the internal variety. Enlargement of the nodes is, however, a characteristic of certain special types of conjunctival disease, especially of those caused by viruses and fungi.

Three types of adenopathy are seen. In the first type there is a palpable, nontender or only slightly tender enlargement of the nodes, not grossly visible. This type is characteristic of acute follicular conjunctivitis, particularly acute follicular conjunctivitis Béal,[1] and of inclusion conjunctivitis. In rare instances it is seen in acute trachoma but never in chronic or low grade trachoma. The second type is a visible but not grossly prominent adenopathy in which the nodes are tender to palpation and in which the sublingual and submaxillary nodes are sometimes involved. This type of change is characteristic of epidemic keratoconjunctivitis[2] and of the rare cases of acute herpetic conjunctivitis. The third type of nodular change is a grossly visible adenopathy which constitutes a prominent feature of the disease and produces gross disfigurement; suppuration of the nodes in this type is not infrequent. It is this type of adenopathy which is characteristic of the oculoglandular syndrome of Parinaud which includes such various conjunctivitides as leptotrichosis conjunctivae, tuberculosis of the conjunctiva, lymphogranuloma venereum conjunctivitis, syphilis of the conjunctiva, oculoglandular tularemia, etc.

Preauricular adenopathy is only rarely seen in any other types of conjunctivitis except, of course, as it may occur as part of a general enlargement of the lymph nodes. Palpation of the preauricular nodes should therefore be a routine part of the examination of any conjunctival disease of unknown causation.

THE DIAGNOSTIC VALUE OF CHANGES IN THE LID MARGINS

Blepharitis[3] is often the source of chronic conjunctivitis and neglect of examination of the lid margins may result in failure to recognize and treat the primary focus of a conjunctivitis resistant to all local conjunctival therapy. The blepharitis may occasionally be so mild as to be overlooked in gross examination, but in this event examination with the slit lamp readily reveals the abnormal condition of the margin. The cause of the conjunctivitis is often indicated by the appearance of the blepharitis. Diplobacillary infection, for example, is typically angular and spares the meibomian glands and follicles of the cilia, whereas the staphylococcic variety has a considerable tendency to involve these structures; the occurrence of ulcers at the bases of the cilia may in fact be considered pathognomonic of staphylococcic infection.

Seborrheic dermatitis of the eyelids, when uncomplicated with secondary infection, is recognized by the heavy, soft, greasy scales which are far different from the hard, dry, tenacious crusts of staphylococcic blepharitis. When seborrheic dermatitis is suspected it is always well to examine the scalp, since a severe infection of the scalp usually precedes the infection of the lid margins.

Meibomitis, with or without blepharitis, is also often the source of a chronic conjunctivitis, and digital expression of the meibomian glands and observation of the expressed material should be a part of the routine examination of the conjunctiva in conjunctivitis. The abnormality of the secretion is recognized by its copious amount and by its color and consistency. The normal meibomian secretion is a thin transparent oil.

Read before the Section on Ophthalmology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

[1] Beal, R.: Sur une forme particulière de conjonctivite aigue avec follicules, Ann. d'ocul. **137:** 1, 1907.

[2] Hogan, M. J., and Crawford, J. W.: Epidemic Kerato-Conjunctivitis, Am. J. Ophth. **25:** 1059, 1942.

[3] Thygeson, P.: The Etiology and Treatment of Blepharitis: A Study in Military Personnel, Mil. Surgeon **98:** 191 and 279, 1946.

Many ophthalmologists forget that the common wart[4] and the nodule of molluscum contagiosum,[5] when they occur on the margin of the lid, usually produce chronic conjunctivitis and keratitis. A molluscum nodule, particularly when on the lower lid, may be inconspicuous and readily overlooked.

Residual swelling from recurrent styes indicates a residual staphylococcic infection of the lid margins which may well be the source of a chronic conjunctivitis.

Chronic edema of the eyelids due to blockage of lymph vessels is a characteristic feature of lymphogranuloma venereum keratoconjunctivitis[6] and can be considered almost pathognomonic of the infection.

Abnormalities of the Puncta and the Canaliculi.—Swelling, redness and dilatation of one or both lacrimal puncta is characteristic of Streptothrix concretions, which constitute an important cause of unilateral conjunctivitis. The diagnosis can be made by expression of cheesy concretion material from the punctum by pressure along the canaliculus. Microscopic examination of this material always shows Streptothrix elements.

CONJUNCTIVAL CHANGES OF DIAGNOSTIC IMPORTANCE

Minor Changes.—All types of infectious conjunctivitis are characterized by the brilliant red color of the conjunctiva due to hyperemia and formation of new vessels. Allergic inflammations, on the other hand, have a characteristically milky appearance. This is often striking, particularly in vernal catarrh, and is useful for diagnosis. It is probably due to the predominance of edema over cellular infiltration in allergic inflammations.

Small subconjunctival hemorrhages involving the bulbar conjunctiva suggest influenza bacilli or Koch-Weeks conjunctivitis, but their diagnostic value is by no means clearcut, as they may also occur, although much more rarely, in other types of bacterial infection, notably pneumococcic infections.

Bulbar chemosis should immediately suggest gonococcic conjunctivitis, of which it is often an early sign, occurring even before the appearance of gross cellular infiltration and exudation. It may occur rarely, however, in other severe conjunctival infections, and its value as an early sign in trichinosis should never be overlooked. In this condition there is no inflammation of the conjunctiva proper.

The character of the conjunctival secretion is of some diagnostic value. The secretion from allergic conjunctivitis, particularly vernal catarrh, has a high fibrin content and is stringy in character in contrast to the flaky or amorphous exudate of an ordinary bacterial infection. A foamy, whitish secretion collecting at both inner and outer angles always suggests conjunctivitis due to, or associated with, an overactivity of the meibomian glands. A scanty secretion in the presence of an acute conjunctival inflammation is always suggestive of a virus infection.

Papillary Hypertrophy.—The microscopic type of papillary hypertrophy, which gives the velvety appearance to many types of acute and chronic conjunctivitis, carries no diagnostic significance. The gross variety, on the other hand, which is often known as giant papillary hypertrophy and of which the palpebral hypertrophy in vernal catarrh is the outstanding example, is of great diagnostic value. Its occurrence on the upper tarsal conjunctiva, most prominently near the upper border, is almost diagnostic of vernal catarrh. Otherwise it is seen extremely rarely and only in chronic infections of great severity such as chronic gonococcic conjunctivitis. I saw this condition a number of times in Egypt and Tunisia but never have seen it in this country. This type of papillary hypertrophy has sometimes been confused with follicular hypertrophy, but when doubt occurs, examination with the slit lamp permits easy differentiation, since the follicle has an avascular center whereas the papilla has a central vascular core.

Follicular Hypertrophy.—The conjunctiva has a normal adenoid layer, and an occasional lymphoid follicle may be seen in the conjunctiva of young persons, particularly in the fornices. Follicles are never seen on the normal tarsal conjunctiva, however. The diagnostic value of the follicle depends primarily on its location and secondarily on its consistency and relative prominence. Thus, follicles involving the upper tarsal conjunctiva are always suggestive of trachoma, whereas follicles which spare the upper tarsal conjunctiva but involve the fornices and the lower fornix predominantly always suggest folliculosis or follicular conjunctivitis. The follicles of trachoma are soft, gelatinous and easily expressed, while the follicles of folliculosis and follicular conjunctivitis are hard and expressible only with the greatest difficulty. There is no essential difference between the follicles of folliculosis and of follicular conjunctivitis, but in the latter they are much less prominent, since they may be partially or completely buried in the coexisting subepithelial infiltration.

Granulomatous Changes.—Apart from the small granulomas which may result from buried foreign bodies or ruptured chalazia, conjunctival granulomas are generally associated with oculoglandular conjunctivitis, of which conjunctival tuberculosis and oculoglandular tularemia are the outstanding examples. Both of these diseases have granulomatous conjunctival nodules which may ulcerate. In tularemia the nodules are usually rather numerous and are accompanied by considerable inflammatory reaction, in most instances severer than that found in tuberculosis. In leptotrichosis conjunctivae the occurrence of small, whitish or grayish necrotic foci[7] without gross ulceration is a characteristic and almost pathognomonic feature. These foci must be distinguished from conjunctival concretions which may have been present prior to the onset of the particular inflammation.

Single large granulomas without diffuse conjunctival inflammation should be considered as suggestive of rhinosporidiosis[8] and should be subjected to microscopic examination. This disease, though admittedly rare, has been reported from several parts of the country.

Conjunctival Ulcers.—As mentioned above, conjunctival ulceration is characteristic of conjunctival tuberculosis and oculoglandular tularemia but it may also be seen rarely in other conditions, such as chancre of the conjunctiva and acute pemphigus. The ulcers of acute pemphigus are readily distinguished from other ulcers by their shallow character and transient nature.

---

[4] deRötth, A.: Common Wart as an Etiologic Factor in Certain Cases of Conjunctivitis and Keratitis, Arch. Ophth. **21:** 409 (March) 1939.

[5] Offret, G., and Duperrat, R.: Les manifestations oculaires du molluscum contagiosum, Arch. d'opht. **2:** 993, 1938. Quill, T. H.: Molluscum Contagiosum of Eyelid and Cornea: Report of a Case, Proc. Staff Meet., Mayo Clin. **15:** 139, 1940.

[6] Bollack, J.; Basch, G., and Desvignes, P.: Infection conjonctivale avec adénopathie due au virus de la maladie de Nicolas-Favre, Bull. Soc. d'opht. de Paris, 1936, p. 409. Curth, W.; Curth, H. O., and Sanders, M.: Chronic Conjunctivitis Due to the Virus of Venereal Lymphogranuloma, J. A. M. A. **115:** 445 (Aug. 10) 1940.

[7] Verhoeff, F. H.: Observations on Parinaud's Conjunctivitis, Am. J. Ophth. **1:** 705, 1918.

[8] Elles, N. B.: Rhinosporidiosis Seeberi Infection in the Eye, Tr. Am. Ophth. Soc. **38:** 369, 1940.

Formation of Membrane and Pseudomembrane.—For the purposes of this discussion, the term pseudomembrane refers to fibrin coagulum located on the epithelium but readily removable without damage to it. In a true membrane, on the other hand, coagulation of the fibrinous exudate has also occurred in the epithelium and in the subepithelial tissues so that removal of the membrane leaves a bleeding, rough surface. Conjunctival pseudomembranes are of two types, the fine, transient type and the thick, relatively permanent type. The outstanding example of the first type is the extremely fine, transparent membrane which is characteristic of vernal catarrh in the active phase and indeed almost pathognomonic of the disease. Fine, transient pseudomembranes, generally less transparent than those seen in vernal catarrh, may occur occasionally in hyperacute conjunctivitis of several types, including gonococcic conjunctivitis and even epidemic keratoconjunctivitis.

Thick, opaque, more lasting pseudomembranes immediately suggest diphtheria of the conjunctiva, and treatment with diphtheria antitoxin may be begun on the basis of their appearance alone. Similar thick pseudomembranes do occur, however, in beta hemolytic streptococcic infections of the conjunctiva and particularly in the endogenous variety, in which they may persist over a period of many years. It should be recognized, moreover, that they sometimes occur in erythema multiforme and occasionally in ocular pemphigus. Examination of the nose and throat should never be neglected, therefore, when conjunctival membranes or pseudomembranes are present, since the finding of stomatitis points to the diagnosis of erythema multiforme or pemphigus, whereas nasal or nasopharyngeal membranes indicate diphtheria or beta hemolytic streptococcic infection. It should also be remembered that formation of pseudomembrane or membrane may follow extensive radiation of the eye.

Cicatrization.—Conjunctival scars are of great diagnostic value. Omitting for the purposes of this discussion the scars which follow injury, operation for chalazia or burns, only three diseases need be considered in differential diagnosis; namely, trachoma, pemphigus and diphtheria. The scars of trachoma involve the upper tarsal conjunctiva predominantly and those of ocular pemphigus the lower tarsal conjunctiva and fornix predominantly. In ocular pemphigus there may be obliteration of the entire lower fornix. This never occurs in trachoma, and shrinkage of the lower fornix is always less than that of the upper. It should be remembered that, although trachoma sometimes heals with mild scarring, there is always sufficient cicatrization to be recognized in careful examination with the slit lamp.

The scarring of diphtheria is generally diffuse, and there is usually not much shrinkage of the fornices.

It should also be remembered that radiation often causes formation of scars and that, since application of radium is a common procedure in vernal catarrh, radium scars are not uncommonly seen.

The Phlyctenule.—The conjunctival phlyctenule is pathognomonic of phlyctenular conjunctivitis and is believed to be an allergic reaction to a bacterial antigen, most commonly tuberculoprotein. When typical the phlyctenule cannot be confused with any other structure, but occasionally differentiation must be made from the limbal excrescences of vernal catarrh, from localized episcleritis and from inflammation involving the pinguecula. Inflammation involving this latter structure is by no means uncommon and probably forms one special type of episcleritis. Unlike conjunctival phlyctenules, corneal phlyctenules lack diagnostic value. They are difficult to distinguish from catarrhal infiltrates, and diagnosis must in fact be based on the simultaneous occurrence of conjunctival phlyctenules.

Conjunctival Concretions.—Concretions in the conjunctiva as distinguished from infarcts of the meibomian glands always indicate the occurrence of past or present chronic conjunctivitis. Their diagnostic value is slight, but when they occur in large numbers they can be considered suggestive of old trachoma.

Bitôt's Spots.[9]—These areas of keratinization are typically triangular in shape and lie at the temporal limbus with the base to the limbus. As seen on examination with the slit lamp, they have a characteristic appearance, exhibiting folds concentric with the limbus and dry, greasy, opaque surfaces. They usually indicate a vitamin A deficiency, although in tropical countries their occurrence has been reported in the absence of such deficiency.[10] Bitôt's spots may occur elsewhere than at the limbus, but the first lesion of vitamin A deficiency is almost always in this location. They are generally bilateral but occasionally affect only one side. There is almost always an associated disturbance of the corneal epithelium which gives it a punctate opacification readily recognized on examination with the slit lamp. Although not grossly visible, this opacification is sufficient to dull the normal corneal luster.

LIMBAL AND CORNEAL LESIONS OF DIAGNOSTIC IMPORTANCE

Limbal Follicles.—Limbal follicles involving the upper limbal region predominantly must be considered pathognomonic of active trachoma. Their appearance is absolutely characteristic, and they cannot be confused with such other limbal hypertrophy as occurs in the limbal variety of vernal catarrh. When the limbal follicles absorb they leave behind cicatricial remains known as Herbert's pits.[11] These pits appear as clear areas in the serrated limbal margin and are best demonstrated by retroillumination. Like the limbal follicles their demonstration is an unequivocal indication of preexisting trachoma. Unfortunately they occur in not more than 50 per cent of the cases of trachoma.

Limbal Hypertrophy of Vernal Catarrh.—The papillary excrescences of vernal catarrh involve the temporal and nasal areas of the limbus predominantly but occasionally form a ring around the entire cornea. This limbal hypertrophy when typical is pathognomonic of the limbal variety of vernal catarrh, but in cases of mild disease it is sometimes confused with the limbal hypertrophy occurring in phlyctenular conjunctivitis or even with that of episcleritis. When chalky concretions, known as Trantas' spots,[12] occur in the limbal hypertrophy, however, it may be considered diagnostic of vernal catarrh.

---

[9] Bitôt, P.: Gaz. méd. **1**: 435, 1863; cited by Duke-Elder, S.: Text-Book of Oph[illegible] C. V. Mosby Company, 1938, p. 1755. Berlin[illegible] Early Detection of Avitaminosis A by Gross o[illegible] of the Conjunctiva, Am. J. Ophth. **25**: 302, 1942.

[10] Metivier, V. M.: Bitôt's Spots in Trinidad, Am. J. Ophth. **24**: 1029, 1941.

[11] Busacca, A.: Die trachomatöse avasculare Keratitis, Klin. Monatsbl. f. Augenh. **72**: 243, 1924. Herbert, H.: Corneal Pitting, Brit. J. Ophth. **19**: 261, 1935.

Extension of Limbal Vessels.—Extension of limbal capillary loops into the cornea is characteristic of incipient trachoma and may occur in cases of severe trachoma as early as one week after onset. This extension in trachoma always occurs first at the upper part of the limbus and is always much more prominent there than at the lower part. When combined with punctate epithelial staining and subepithelial infiltrates, more pronounced in the upper half of the cornea than in the lower, the diagnosis of trachoma is almost mandatory.

Extension of limbal capillary loops may of course occur in other conditions besides trachoma, such as phlyctenulosis, riboflavin deficiency,[13] marginal infiltrates, herpes corneae, and even occasionally in vernal catarrh, but the vascularization is usually irregular in these conditions and is not localized predominantly in the superior part of the limbus, as in trachoma. These conditions also lack the upper corneal infiltration and punctate epithelial staining which is characteristic of trachoma. It should be remembered that in older persons arcus senilis is usually accompanied by penetration of limbal capillary loops beyond the normal boundary of the limbus.

A wide limbus is sometimes confused with corneal vascularization, but if particular attention is paid to the corneal boundary of the limbus no such mistake will be made. The corneal border of the limbus, best seen by direct focal illumination, appears as the slightly serrated border of the limbal opacity. Gross extension of capillary loops beyond this line can be considered pathologic.

Marginal Infiltrates and Ulcerations.—Isolated marginal corneal infiltrates, especially when accompanied by punctate epithelial staining, are almost diagnostic of staphylococcic conjunctivitis,[14] although they may in rare instances also be seen in diplobacillary, Koch-Weeks, and streptococcic conjunctivitis. Scattered subepithelial infiltrates involving the upper half of the cornea predominantly always suggest trachoma. The occurrence of grossly visible round subepithelial infiltrates tending to involve the pupillary area is almost pathognomonic of epidemic keratoconjunctivitis.[15] Marginal infiltrates of an extensive nature and tending to form rings concentric with the limbus always suggest endogenous infections. Such ring infiltrates are seen in endogenous conjunctivitis of various sorts and with special frequency in the keratoconjunctivitis which occasionally accompanies bacillary dysentery.

Punctate Epithelial Staining.—The diagnostic value of punctate epithelial staining is in general not sufficiently realized. It is perhaps most frequently seen in staphylococcic conjunctivitis, in which it tends to involve the lower half of the cornea predominantly. In this condition the punctate staining is fine and the points never become confluent. Similar punctate staining in conjunction with formation of filament and irregular confluent lesions immediately suggests keratoconjunctivitis sicca;[16] the simultaneous occurrence of mucus secretion sticking to the corneal surface gives a picture pathognomonic of the disease. The punctate staining of trachoma is exactly like that of staphylococcic conjunctivitis except that it always involves the upper half of the cornea predominantly. The punctate staining of superficial punctate keratitis differs strikingly from the previously described types in that only a limited number of staining areas occur and that each of these is formed by a group of punctate staining points which can readily be resolved by high power examination. Punctate staining similar to that occurring in staphylococcic conjunctivitis is occasionally observed in eyes which have received radiation.

COMMENT

Certain of the previously discussed clinical findings are individually pathognomonic of a number of etiologic types of conjunctivitis. Thus the limbal follicles or their cicatricial remains (Herbert's pits) are in themselves unequivocally diagnostic of trachoma. Of similar importance are the chalky concretions (Trantas' spots) in the limbal excrescences of vernal catarrh, and the pavement block-like papillae on the upper tarsal conjunctiva in palpebral vernal catarrh.

Most conjunctival changes, however, are not in themselves individually pathognomonic but are only suggestive of certain causal types. Examples of such nonpathognomonic changes include punctate epithelial staining of the cornea, the conjunctival follicle and extension of limbal vessels into the cornea. But when several such changes occur simultaneously, they may together point to a specific cause. Thus the extension of limbal vessels, when combined with punctate epithelial staining, subepithelial corneal infiltrates and upper tarsal follicles, gives a composite picture diagnostic of trachoma. In the same way punctate epithelial staining of the cornea, in itself not pathognomonic, is clearly indicative of staphylococcic infection when combined with chronic conjunctival inflammation and lesions of the lid margins.

SUMMARY AND CONCLUSIONS

There are a number of clinical signs, both gross and biomicroscopic, which are of diagnostic importance in conjunctivitis. Changes in the regional lymph nodes, the lid margins, the limbus and the cornea are of almost equal diagnostic importance with those occurring in the conjunctiva itself. By clinical examination alone it is possible to identify many of the various etiologic types of conjunctivitis. When these clinical observations are correlated with cytologic and bacteriologic studies, the cause can be determined in a high percentage of cases.

ABSTRACT OF DISCUSSION

Dr. James H. Allen, Iowa City: Dr. Thygeson has provided a logical and practical basis for beginning the differential diagnosis of inflammatory and infectious diseases of the eye. Under Dr. Thygeson's influence my colleagues and I have used this method not only for diagnosis but for teaching our residents. We find that it is highly stimulating to the residents and that it simplifies teaching. It is unfortunate that time did not permit Dr. Thygeson to extend the differential diagnosis which he uses to its logical completion. The beginning is the differentiation on the basis of a single manifestation—preauricular adenopathy, for instance. The extension, then, is the division into and differentiation of follicular conjunctivitis, nodular conjunctivitis, the ulcerative variety, and so on.

---

[12] Trantas, A.: Sur le catarrhe printanier, Arch. d'opht. **30**: 593, 1910.

[13] Sydenstricker, V. P.; Sebrell, W. H.; Cleckley, H. M., and Kruse, H. D.: Ocular Manifestations of Ariboflavinosis, J. A. M. A. **114**: 2437 (June 22) 1940.

[14] Allen, J. H.: Staphylococcic Ocular Inflammation, Journal-Lancet **62**: 207, 1942.

[15] Braley, A. E.: Epidemic Keratoconjunctivitis, Arch. Ophth. **33**: 47 (Jan.) 1945.

[16] Sjögren, H.: General Symptomatology and Etiology of Keratoconjunctivitis Sicca, Acta ophth. **13**: 1, 1935.

DR. TRYGVE GUNDERSEN, Boston: Conjunctivitis alone gives rise to few symptoms except those associated with swelling of the conjunctiva, interference with lacrimal drainage and increased secretion of mucus, pus and tears. These in order cause a sense of fulness around the eyes, some tearing and, lastly, agglutination of the lids, especially on awakening. When the cornea becomes involved, new symptoms appear. Punctate keratitis, such as caused by Staphylococcus toxin, causes pain—occasionally a definite deep-seated ache in the globe. Since it is not uncommon for the superficial punctate lesions to heal during the day with the natural cleansing of the conjunctiva and the washing away of the bacterial toxins, the symptoms also disappear. Therefore, a symptom of diagnostic importance is ocular pain, most severe in the early morning and lessening during the day. In contrast to ocular pain which is most severe on arising and less severe as the day goes on, there are painful sensations which behave in a reverse manner. For instance, in keratoconjunctivitis sicca the healing of the corneal defects occurs during the night, when the lids are closed and the cornea is kept normally moist and lubricated. Therefore the painful sensations of heat and dryness of which these patients complain increase during the day. This is particularly true on hot, dry and windy days. Itching is a symptom which is most helpful for the ophthalmologist to elicit and should never be overlooked when offered spontaneously by the patient. To me it invariably and exclusively indicates allergy. The victim of hay fever knows this. No patient with active vernal catarrh fails to give itching as his most troublesome complaint. It exists even in conjunctivitis due to the prolonged use of atropine and less frequently of physostigmine salicylate and pilocarpine. The cause of the itching has never been clearly defined, but I believe that it may be due to—or at least it is always associated with—the corneal stippling which Dr. Thygeson has described as fine punctate staining. This is an important type of corneal change to recognize as an entity. Not all the stippled points do stain with fluorescein sodium. At the Massachusetts Eye and Ear Infirmary we have accepted Vogt's term, "keratitis epithelialis disseminata," and until a better term is offered, I suggest that this descriptive one be used. It is common. It always exists on the corneas of patients who have active vernal catarrh, and frequently on the corneas of patients with other allergic conditions of the eyes. I offer it as possibly the direct cause of ocular itching.

DR. I. S. TASSMAN, Philadelphia: The oculoglandular syndrome of Parinaud was referred to as leptotrichosis, which is what we always understood it to be. I wonder if Dr. Thygeson could add anything to clarify the relationship of the virus of lymphogranuloma venereum to the causation of Parinaud's oculoglandular syndrome.

DR. PHILLIPS THYGESON, San Jose, Calif.: I was particularly interested to have Dr. Gundersen discuss the diagnostic value of the various subjective symptoms of conjunctivitis. Dr. Allen brought out the important interrelationship of the various signs and symptoms of conjunctivitis and showed that whereas one sign alone may not be diagnostic, the combination of two or more signs may be so. This is well brought out in oculoglandular conjunctivitis, in which the presence of a visibly swollen preauricular node is not in itself diagnostic but, when combined with small areas of necrosis in the conjunctiva immediately points to the etiologic entity of leptothricosis conjunctivae (Verhoeff). There seem to be two schools of thought on the oculoglandular syndrome of Parinaud. Dr. Verhoeff, I believe, is of the opinion that there is only one Parinaud conjunctivitis, which is the leptothrichosis conjunctivae, in which he discovered the causal agent. The late Dr. Sanford Gifford strongly urged the use of the term "oculoglandular syndrome of Parinaud" to include all the various etiologic types of conjunctivitis characterized by the occurrence of large swollen preauricular glands. In this syndrome would be included such etiologic entities as tuberculosis of the conjunctiva, lymphogranuloma venereum conjunctivitis, syphilis of the conjunctiva, etc. There are ten or more entities which would be included in this group. I personally prefer the term "oculoglandular syndrome of Parinaud" for use in describing a conjunctivitis of this type, at least until the causation has been determined, which in many cases will be found difficult or impossible.

SYMPATHECTOMY FOR PERIPHERAL VASCULAR SCLEROSIS

GEZA de TAKATS, M.D.
and
MATTHEW H. EVOY, M.D.
Chicago

Peripheral vascular sclerosis is the overwhelming single cause of deficient arterial circulation in the lower extremities. Four grades of this disease can be recognized, and it was pointed out in a previous study[1] that any therapeutic measure must be evaluated on the basis of these four groups and their response toward the method under scrutiny.

In this study lumbar sympathectomy has been employed alone or in combination with various types of amputation in rigidly selected patients. Our purpose here is to discuss the selection of cases, the surgical approach and the results together with an interpretation of the observations. The previous literature on the subject has been summarized elsewhere.[2]

MATERIAL STUDIED

The series consists of 57 carefully selected cases, and we shall group them according to the severity of the disease as outlined in a previous paper.[1]

GROUP 1.—These patients have diminished or absent pulsations of the foot or lower leg. The skin is warm, and the color of the feet is normal. They can walk a distance of 2 to 6 blocks without pain. Comparatively few patients are seen in this series, since their symptoms increase insidiously and seldom send them to seek medical advice. In hypertensive persons or patients suffering from angina pectoris the symptoms of claudication are masked, overshadowed or prevented by the appearance of ischemic syndromes elsewhere.

Lumbar sympathectomy has been performed in 18 such patients. The improvement in walking ability in some has been dramatic. The average increase in ability to walk without claudication has been from 3 blocks to 9 blocks; however, a 51 year old mail carrier increased his walking ability to an unlimited distance and a 38 year old amusement park operator could walk for three hours continuously without pain.[2] These persons have been restored to their full earning power. Another group just about doubled their walking ability, and in 2 patients there has been no improvement in claudication, although the foot and lower leg has become warm and dry. This immediately raises the question whether claudication can be relieved at all by sympathectomy, a question to be taken up later.

GROUP 2.—The feet of the patients in this group are pulseless, and their ability to walk without pain is reduced to below 2 blocks. However, trophic changes may still be absent although the feet are cold and dry and a single toe is often cyanotic. A cold and moist foot, incidentally, always gives a better prognosis because such patients exhibit a heightened sympathetic tone, the release of which warms up their skin. In

---

Read before the Section on Surgery, General and Abdominal, at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

From the Department of Surgery, University of Illinois College of Medicine, and the fourth surgical service, St. Luke's Hospital.

[1] de Takats, G.; Beck, W. C., and Roth, E.: The Neuro-Circulatory Clinic: A Summary of Its Activities; I. Peripheral Vascular Disease, Ann. Int. Med. **13**: 957, 1939.

[2] de Takats, G.; Fowler, E. F.; Jordan, P., and Risley, T. C.: Sympathectomy in the Treatment of Peripheral Vascular Sclerosis, J. A. M. A. **131**: 495 (June 8) 1946.

such patients walking ability remains unimproved. However, the cyanosis may disappear and a pregangrenous leg has been converted into a warm, dry extremity which remains painless on definitely limited walking. Improvement in walking ability within six to twelve months aided by a suitably set rhythmic constrictor can occur. The nonsympathectomized leg may deteriorate faster and in 2 instances has come to amputation, whereas the sympathectomized leg maintained its viability. Of 22 patients in this series only 1 required an amputation.

GROUP 3.—There is pain at rest and intractable ischemic neuritis in this group. Walking may be less painful or even offer relief when rest in bed is difficult. When the foot is ice cold and when arteriolar obstruction and capillary paralysis are obvious from the pronounced dependent rubor sympathectomy is of no use and may precipitate [illegible] ɔrm, however, in which the pulseless foot is hot and osteoporotic and tolerates even mild heat but poorly, a causalgic state exists,[3] and after a satisfactory response to sympathetic block a sympathectomy has averted amputation. This is a small but definite group of 6 patients, 3 of whom were diabetic and 2 alcoholic, an indication that their ischemic neuritis was superimposed on a neuropathy of other origin.

GROUP 4.—These patients exhibit ulceration and gangrene of the digits or parts of the foot. The lesion is dry and not too painful. There is no evidence of infection. The popliteal pulse is absent, and possibly the femoral is also absent. Supracondylar amputation used to be the surgical procedure of choice in these patients at the level of positive histamine flares. However, a sympathetic block may so shift the level of circulatory efficiency that a lower leg or a midmetatarsal amputation can be tolerated. This is an important group, since patients can be discharged with a healed stump below the knee or at metatarsal levels who would never tolerate such an amputation without sympathectomy. There are, of course, certain precautions to be taken in performing these amputations. The surgical operations are performed by avoiding flaps, by never suturing anything else but skin, by avoiding the slightest tension and by draining through a dependent stab wound. Traction is never used, nor is snug elastic compression advisable, but a loose stump dressing is applied and left alone for twelve to fourteen days. We mention these details because the traumatic amputations in the Armed Forces required an entirely different type of management, which is not applicable to this group. Eleven patients are in this series. Their number can be greatly increased but is limited by age, general debility or general cardiovascular damage.

SUMMARY OF RESULTS

A tabulation of the four groups reveals the following: In the first group walking ability was not improved in 2 of 18 patients; in the second group pain was unrelieved and gangrene developed in 1 of 22 patients; in the third group pain at rest was relieved and amputation averted in all 6 patients. In the fourth group below the knee or midmetatarsal amputations healed in 10 of 11 patients. Of the total 57 patients, then, 53 benefited considerably whereas 4 failed to benefit from the surgical operation. Considering the degree of vascular involvement, this is an encouraging performance.

THE TECHNIC OF LUMBAR SYMPATHECTOMY

Recently I have described our method of muscle-splitting, extraperitoneal approach in the surgical clinics.[4] In these sclerotic, handicapped, elderly patients this is the simplest and least injurious surgical operation, performed under spinal anesthesia in from twenty-five to forty-five minutes, with early ambulation and discharge from the hospital after a week to ten days. When bilateral sympathectomy is needed, the two stages of the operation are performed a week to ten days apart. The transperitoneal approach is used only in certain infrequent instances; when it is important to remove the first ganglion because of an iliofemoral occlusion the lumbar approach may be used, which is easier on the surgeon but more difficult for the patient.

There has been no mortality in this group and none in several hundred lumbar sympathectomies performed for other causes. One severe infection which developed in a wound had to be drained; the patient made a good recovery. The infection was traced to a persistent streptococcus carrier among the instrument nurses.

COMMENT

As Hueper [5] pointed out, a fatalistic attitude prevails toward the prevention and treatment of arteriosclerosis, since the theory of senescence still obtains in the minds of most physicians. In his review Hueper has listed a multiplicity of factors capable of producing a similar tissue response in the arterial tree. From the surgeon's point of view peripheral arteriosclerosis is often encountered as a segmental, patchy disease responsible for ischemia, which need affect other organs only slightly. The first object of study, then, is to examine the extent of vascular involvement in vital organs. This is accomplished by a study of eyegrounds, the electrocardiogram, a 2 meter chest film and a concentration dilution test. Cerebral, cardiac or renal involvement of severity obviously rules out any surgical attempt to improve circulation of one or two lower extremities. Certainly a patient is not a candidate for sympathectomy if he has had a stroke or a myocardial infarct or if he exhibits decided renal impairment.

Three factors may be considered without argument as being important in the causation and progression of arteriosclerosis, namely: diabetes, lipemia and hypertension. None of these have to be present, but when they are suitable measures must be undertaken to control them. Diabetes is not a contraindication to lumbar sympathectomy; in fact, some of the severe burning paresthesias have been seen to be relieved after this surgical operation (group 3 of our series). But of course its preoperative and postoperative control is obviously necessary. Lipemia, with or without hyperglycemia, has been relatively frequently encountered; the literature on attempts to control it is vast and need not concern us here.[6]

The point should be made, however, that the reduction of blood cholesterol levels of over 250 mg. per hundred cubic centimeters prevents further atheromatous deposits and is frequently possible with high protein, low fat diets, thyroid, lipocaic or methionine.

The factor of vascular tension in the production of vascular sclerosis has been especially stressed by

---

[3] de Takats, G.: Causalgic States in Peace and War, J. A. M. A. **128**: 699 (July 7) 1945.

[4] de Takats, G.: The Technic of Lumbar Sympathectomy, S. Clin. North America **26**: 56, 1946.

[5] Hueper, W. C.: Arteriosclerosis: A General Review, Arch. Path. **38**: 162 (Sept.); 245 (Oct.); 350 (Nov.) 1944; **39**: 51 (Jan.); 117 (Feb.); 187 (March) 1945.

[6] Page, I. H.: Arteriosclerosis and Lipid Metabolism, in Moore, R. A.: Ageing and Degenerative Diseases, in Biological Symposia, edited by J. Cattell, Lancaster, Pa., Jacques Cattell Press, 1945, vol. 11.

Moschcowitz.[7] In our study of hypertensive patients, in which over 250 patients have been subjected to dorsolumbar sympathectomy, the involvement of the peripheral vascular tree obviously runs in fair parallel with organic lesions elsewhere in the body, particularly with those of the coronary arteries. We wish to stress the hitherto neglected point, however, that even the normotensive patient carries a higher peripheral resistance in the lower extremities when he sits or stands. This postural hypertension in the lower extremities favors the deposition of subintimal atheromatous plaques, which are notoriously rare in the upper extremities. Certainly this is true in the cholesterin-fed upright rabbit.[8]

The control of postural hypertension in the erect human being by means of sympathectomy is of great importance in the prevention of atheromatous deposits. The accompanying chart indicates that the great shift in peripheral resistance which always occurs when man stands up can be mitigated if not completely abolished by sympathectomy. This is true both in the normotensive and in the hypertensive person. The pulse waves become smaller, the peripheral resistance declines and the mechanical strain on the vascular tree of the standing position is dampened. The drop in skin temperature, which is most pronounced in the feet when the individual is erect, is also abolished.

That thermal stimuli, such as a cold spray or a cool draft are also ineffective in the sympathectomized limb is too well known to receive much comment. That it is a potent factor in the symptomatology of vascular disease is known to those patients who seek a subtropical climate for the relief of their symptoms. While the sympathectomized limb may cool off on direct exposure to cold, it regains its previous temperature much faster when its vasomotor supply is cut.[2]

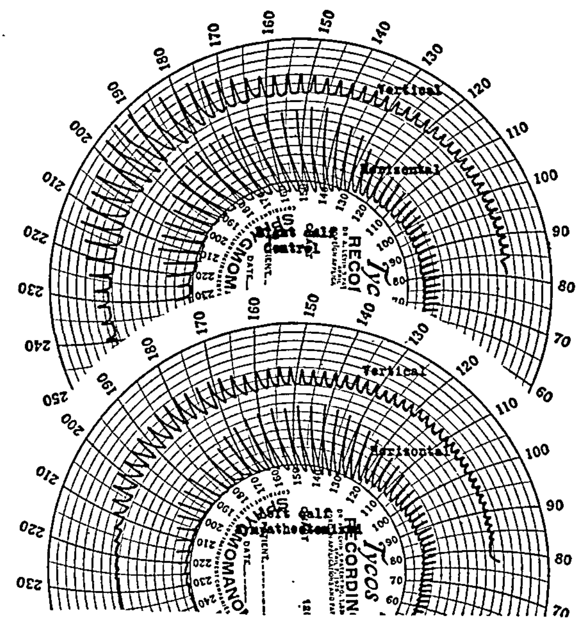
A third factor affecting the flow of blood is the central nervous factor. Emotional stimuli, anxiety, hostility and mental arithmetic may cause vasoconstriction or vasodilatation, usually the former. Any of these effects is abolished by sympathectomy. The sympathectomized limb of the patient suffering from peripheral vascular sclerosis is freed from postural, reflex, thermal and emotional vasoconstriction. The time-honored advantages of rest in bed in the horizontal position and of even warm climate or mild heat and freedom from worry, which exert a beneficial influence on peripheral circulation, are all suddenly accomplished by lumbar sympathectomy.

The utilization of an intermittent venocapillary stretch, which is a widespread and extremely useful method of treating peripheral vascular disease, is greatly facilitated by sympathetic denervation, since constrictor reflexes originating from this procedure are abolished. The five points in favor of lumbar sympathectomy on the lower extremity may then be briefly summarized as follows:

1. The extremity warms up faster and cools more slowly on direct exposure. Reflex effects of heat and cold are ineffective.
2. The high vasoconstrictor tonus in the sitting or standing position is abolished.
3. Vascular exercises such as intermittent venous hyperemia are more effective.
4. Any cross stimulation between sympathetic and demyelinated sensory fibers is abolished.
5. During effort the sympathectomized extremity will not cool off; on the contrary, it may become warmer.

The 57 patients whose cases are reported herein are of course just a drop in the bucket to the staggering number of middle-aged men for whom such surgical intervention might become necessary. It seems that if claudication becomes a handicap or an alarming symptom to the patient he has little of the physician's therapeutic armamentarium from which to choose. The continuous use of intermittent venous hyperemia in the home[9] for a period of many months and years has definite value but is lengthy and time-consuming, and the surgical operation has accomplished in one week what the constrictor may do in many months.

Prolonged sojourn in subtropical climates is known to be helpful, but the cost is prohibitive for many. Rest in bed for many weeks decreases vasomotor tone and is often the only possible course before amputation. As pointed out elsewhere,[2] the sympathectomized limb with its vasomotor palsy offers the advantages of horizontal rest in bed, warm climate and freedom from worry, as far as its effect on the extremity is concerned.



Oscillometric graphs from the right and left calves of a patient whose left lower extremity has undergone sympathectomy. Note that on the nonsympathectomized extremity the diastolic pressure rose from 100 to 160 mm. of mercury when the patient stood up. On the sympathectomized side there is no increase in the height of the pulse waves at higher levels and peripheral resistance did not change in the vertical as compared with the horizontal position. This graph indicates the protective action of lumbar sympathectomy from the postural hypertension of the lower extremity.

Frequently the cramping on walking gives way to fatigue in the calf or the numbness in the foot and toes becomes prominent when claudication improves. This brings into focus the much debated question whether vasomotor paralysis really affects the circulation of the muscles and, indirectly, their metabolism. Disuse of the muscle itself leads to atrophy and often muscle fatigue, which is not muscle cramp, is responsible for the residual symptoms. All this needs to be explained to the patient, who expects complete relief and may be disappointed.

---

[7] Moschcowitz, E.: Vascular Sclerosis with Special Reference to Arteriosclerosis, London, Oxford University Press, 1942.

[8] Wilens, S. L.: The Effect of Postural Hypertension on the Development of Atheromatosis in Rabbits Fed Cholesterol, Am. J. Path. **19**: 293, 1943.

[9] de Takats, G.; Hick, F. A., and Coulter, J. S.: Intermittent Venous Hyperemia, J. A. M. A. **108**: 1951 (June 5) 1937.

SUMMARY

A group of 57 patients with vascular sclerosis of the lower extremities has been studied. If after preliminary block of the lumbar sympathetics the temperature of the digits rose, walking ability improved and generalized vascular involvement was not extensive a lumbar sympathectomy was performed. In one group of patients this operation resulted in a dramatic increase in walking ability; in a second group amputation was averted; in a third group intractable neuritic pain of the causalgic type was benefited, and in a fourth group amputation could be performed at a lower level. In rigidly selected cases of peripheral arteriosclerosis, lumbar sympathctomy has proved to be a method of great value.

ABSTRACT OF DISCUSSION

Dr. Felix Pearl, San Francisco: In the early 1930's, the use of sympathectomy in the treatment of arterial insufficiency of the extremities from degenerative arterial disease was considered almost a surgical crime. Today, we have heard Dr. de Takats report a whole series of such cases. In the clinic at Mt. Zion Hospital we were long ago impressed with the idea that this operation was nonspecific in character, producing increased circulation irrespective of the underlying process. With satisfactory vasoconstriction there is no reason why sympathectomy should not be effective in the treatment of degenerative arterial disease. We have performed this operation on 50 extremities. In almost all instances it was performed by the muscle-splitting extraperitoneal approach, which has been found eminently satisfactory. All but 3 patients had excellent responses to vasomotor paralysis and were considered good subjects for the operation. Of those that had a good element of vasoconstriction, not 1 patient had an amputation of any kind. In a similar period, approximately 75 low thigh amputations were performed for degenerative arterial disease in nonsympathectomized extremities. In about one third of the sympathectomized extremities pulses were improved in volume or were felt postoperatively where none were felt before operation. In a similar number of patients there was well defined relief from claudication. In many the claudication and postural color changes subsided or disappeared. The vasodilatation indicated by the preopeiative study followed the surgical procedure in nearly every instance and persisted for extended periods; in 1 case as long as eight years. Our cases of ulceration or gangrene have had insufficient vasoconstriction to warrant surgical intervention. Otherwise, our results have closely paralleled those of Dr. de Takats. Early in our experience we discarded paravertebral block because of the inability always objectively to determine the successful block and its unreliability in estimating relief from pain. We replaced it with block of peripheral mixed nerves, the completeness of which was evidenced by the anesthesia produced; in over 400 such blocks the method has demonstrated its value. Patients who have already lost one leg are urged to have their remaining extremity sympathectomized if signs of degeneration are present even though it is symptomless. Sympathectomy in degenerative arterial disease is performed to increase the circulation for preservation of the extremity, to relieve symptoms, to stop the pathologic process. Our statistics show that the surgical operation preserves the extremity; but the patient should be warned in advance that his claudication may not be relieved. Heuper's work suggests that sympathectomy also favorably affects the course of vascular degeneration of the lower extremity. Dr. de Takats has been much too conservative in estimating some of his results. For example, in group 1 he lists the results in 2 patients as failures because their claudication was not improved. Yet their extremities showed postoperative vasodilation. I do not consider these failures because they have probably protected the patients against subsequent ulceration or gangrene.

Dr. Alton Ochsner, New Orleans: After this presentation most of us will want to have a sympathetic block before starting our trek through the exhibits or walking up some of the San Francisco hills. The section is indebted to Dr. de Takats for calling attention to this important therapeutic aid. As Dr. Pearl has said, we have been in the habit of thinking of vasodilatation as being limited and applicable only to those cases in which there has been little organic disease. From our experience we are convinced that in even the degenerative cases a vicious circle is set up; that this is less than it is in the vasospastic organic lesions, but that even in these there is a vicious circle which is set up, with the organic obliteration tending to produce vasospasm. We are advocates, as Dr. de Takats is, of the value of the sympathetic block as determined with procaine hydrochloride. We feel that although objective manifestations, such as those obtained by means of the Burch plethysmograph, or oscillograph, are of value; however, the functional result is even more important. If the patient can walk better and farther after the block he is likely to be benefited by sympathectomy. We have not had the difficulty that Dr. Pearl apparently has had in getting a satisfactory block because we use four needles at the first, second, third and fourth lumbar vertebral levels. It is of importance, too, in using sympathectomy, as Dr. de Takats has emphasized, to consider the conservation of extremities. At the present time, in our group, under the direction of Dr. Champ Lyons representing the surgical service and Dr. Guy Caldwell of the orthopedic service we have instituted a program which is, as far as we are concerned at least, very conservative. Whereas we used to do amputations in many of these patients who were having difficulty with their extremities, now by means of sympathetic ligation in a preparatory way, much less radical procedures can be undertaken with the preservation of a good deal of the extremity, which was not possible before the use of sympathetic surgical procedures.

Dr. Robert Katz, New Orleans: I should like to call attention to a very important part of Dr. de Takat's paper, that is, the economic importance of the relief of pain and symptoms. Vascular sclerosis has been perhaps the most terrifying disease of the aging population here in America. Dr. Alton Ochsner and his school, Dr. de Takats and his school and other men throughout the nation have demonstrated what has been done for the relief of acute pain by the simple procedure of sympathectomy. However, there are instances in Dr. de Takat's classification where sympathectomy fails. In this particular group of patients, there is a new nonsurgical method based on a therapeutic drug of one hundred years of experience, namely, U. S. P. ether, used under the name of diethyl oxide because of the adverse psychologic effect produced in patients by mention of the term "ether." I have recorded through the Touro Infirmary of New Orleans and the U. S. Marine Hospital, as consultant, 100 already published cases of peripheral disease, mainly vascular sclerosis treated successfully with diethyl ether given intravenously for a course of twenty-four treatments. In this work I have had the help and the encouragement of Dr. Rudolph Matas. The results appear to be helpful in those cases where sympathectomy is not of benefit or is not indicated. This method has been used with a success of approximately 85 per cent, including the bad results of the initial experimental stage. Sympathectomy in selected cases offers a quicker relief of pain; sympathectomy offers a quicker way to get the man back to economic stability. However, we still have another nonsurgical therapeutic tool, intravenous diethyl ether. It is simple. The safety record is unblemished; no patients have died, no patients have been put into an anesthetic sleep. It is absolutely safe. I hope that the profession, the surgeons especially, will consider this method. We have a new tool, a solution of 2½ per cent diethyl oxide (diethyl ether) administered intravenously in 1,000 cc. isotonic solution of sodium chloride, to implement already established collateral circulation. Perhaps a better one may come along later, but at least a beginning has been made.

DR. GEZA DE TAKATS, Chicago: I am greatly indebted to the discussants and would like to reiterate that it was Dr. Pearl who first drew our attention to the so-called angiospastic claudication, that is, to the type of people who develop angiospasm while walking. It is also his surgical approach of anterolateral muscle-splitting extraperitoneal incision, which can be done in twenty-five to thirty-five minutes under spinal anesthesia, that we have been using. In this series and in another series of sympathectomies performed for other types of peripheral vascular disease, and which now goes into several hundreds, we have as yet had no mortality. Dr. Ochsner has already answered our reaction to the paravertebral block versus peripheral block, in trying to estimate the amount of vasomotor tonus. When one performs a peripheral nerve block, of course one develops a sensory anesthesia and thus does not get as much information about the expected pain-relief resulting from sympathectomy. It is also true, however, that one who is inexperienced in paravertebral block may so flood the lumbosacral plexus that sensory anesthesia results, or one can even get a spinal anesthesia. It is very important, as Dr. Ochsner has already stated, to learn the technic of this simple and useful procedure of paravertebral sympathetic block. Unquestionably there are patients with a high, medium or low vasomotor tonus. That is inherent in their constitution. There have been some efforts made to measure this, but it is certainly true that a patient with a high vasomotor tonus plus arteriosclerosis is going to get a far better result from sympathectomy than a patient with a low vasomotor tonus. Lumbar sympathectomy, of course, is not a cure-all for peripheral vascular sclerosis. I tried to emphasize that this operation is applicable to only a very limited number of patients. Many of them, of course, have acute lymphangitis, many have massive gangrene and many are toxic. It would be folly to waste time on conservative therapy. They need amputation; they need amputation in a hurry, possibly a two stage amputation. Sympathectomy is really not only an early therapeutic but a preventive measure to ward off later disaster.

A CONTRIBUTION TO THE STUDY OF ECLAMPSIA

Consideration of Two Hundred Cases

FRANK E. WHITACRE, M.D.
WALTER M. LOEB Jr., M.D.
and
HENRY CHIN, M.D.
Memphis, Tenn.

With the assistance of T. S. Hill, M.D., and Hudson Jost, Ph.D., on the electroencephalographic tracings

A final classification of the toxemias of late pregnancy has not yet been made, nor can it be made until etiologic factors are more definitely known. An attempt at uniformity in terminology was made by the suggested classification of toxemias of pregnancy by the American Committee on Maternal Health (1939), and this classification has been widely adopted. A voluminous literature has arisen and individual volumes have been written on this complicated problem. Therefore a review of the literature is not attempted herein. This paper limits the term toxemia of pregnancy to include only preeclampsia and eclampsia, because renal disease of pregnancy and hypertensive disease are other entities.

In the past the most plausible theory has been that this condition is the result of a toxin circulating in the blood stream which upsets the water balance and causes changes in the liver, directly or indirectly, and degenerative changes in the kidneys and that convulsions occur because of direct action of a toxin on the cerebral cortex or because of intracranial pressure due to edema. We would rather define this disease of pregnancy as probably related to nutritional deficiencies and characterized by a syndrome of symptoms and distinct pathologic lesions which are associated with angiospasm.

MATERIAL

In the literature many factors of doubtful importance are mentioned. This has led us to review our cases to determine if some of these factors are really significant. The present report comprises data on 100 consecutive eclamptic patients from the obstetric and gynecologic service of the Peiping Union Medical College Hospital, Peiping, China, observed during the years 1935 to 1941. These cases are compared with those of 100 consecutive eclamptic patients from the department of obstetrics and gynecology of the University of Tennessee at Memphis, observed during the years 1941 to 1945 (table 1). Henceforth the group from Peiping will be designated group 1 and that from Memphis group 2. The 100 cases of women with convulsive seizures in group 1 occurred among 4,553 deliveries, giving a hospital incidence of 2.2 per cent, while in group 2 the same number of convulsive patients were encountered in 8,797 deliveries, giving a hospital incidence of 1.2 per cent. The highest seasonal incidence in both groups was in the summer and autumn, and the age incidence was practically the same. Inasmuch as each group consists of 100, each patient represents 1 per cent. All the patients from Peiping were Chinese, while in the Memphis series 96 were Negro and 4 white. The assertion by numerous authors that eclampsia is a disease of primiparas is borne out by our cases; in the Chinese series 75 were primiparas and 25 multiparas, while in the Memphis group 72 were primiparas and 28 multiparas. In group 1 there were 73 who had not previously been seen in the outpatient clinic, while in Memphis 55 were admitted to the hospital without previous treatment, which emphasizes the value of prenatal care.

In regard to the appearance of convulsions in relation to the labor, 75 of group 1 were antepartum, 10 intrapartum and 15 postpartum, while 77 of group 2 were antepartum, 6 intrapartum and 17 postpartum. The stage of gestation conformed to the reports of others, as 98 cases in group 1 and 99 in group 2 occurred after the sixth month of pregnancy.

The uncorrected mortality rate shows maternal death in 20 and fetal death in 36 cases of group 1, while in group 2 maternal death occurred in 14 and fetal death in 20 instances (table 2). In group 1, 53 patients were treated by means of morphine and chloral hydrate. There were 4 cesarean sections; 2 of these patients died. The total of deaths among the 53 mothers was 14. Forty-seven mothers were treated by the use of magnesium sulfate solution given intramuscularly, barbiturate preparations and intravenous hypertonic dextrose; in general they were given the combined treatment recommended by Dieckmann.[1] There was only 1 cesarean section. Of the 47 mothers, 8 died, while in group 2 in which 58 were treated by the combined method and 5 were safely delivered by cesarean section there was a total of 10 deaths. Forty-two patients in group 2

Dr. Henry Chin was formerly of Peiping, China.

Read before the Section on Obstetrics and Gynecology at the Ninety-Fifth Annual Session of the American Medical Association, July 3, 1946.

From the Departments of Obstetrics and Gynecology of the Peiping Union Medical College, China, and the University of Tennessee College of Medicine.

[1] Dieckmann, W. J.: The Toxemias of Pregnancy, ed. 1, St. Louis, C. V. Mosby Company, 1941, p. 428.

were treated by the combined method in addition to the use of veratrum viride. Morphine was not used. There were 7 cesarean sections; 1 death occurred. The total maternal deaths among the 42 mothers was 4. In general, one may say that the results of treatment improved in direct proportion to the more conservative methods of management. There were only 5 cesarean sections in group 1 with 3 deaths and 12 cesarean sections in group 2 with 1 death. However, these surgical interventions were carried out in the latter half of each series after the disease had been brought under control, which emphasizes the importance of this factor.

TABLE 1—*General Summary*

	Group 1, Peiping, China, 1935 1941	Group 2, Memphis, Tenn., 1941-1945
Consecutive eclamptic patients	100	100
Deliveries........	4,553	8,797
Per cent	2.2	1.2
Season		
Spring	14	17
Summer	28	37
Autumn	29	29
Winter . ..	29	17
Age	14 to 45	15 to 41
Race		
Chinese ...	100	0
Negro	0	96
White	0	4
Parity		
Primiparas	75	72
Multiparas	25	28
Gestation in 3d trimester	98	99
Blood pressure after convulsions		
Lowest...	90/ 80	120/ 80
Highest	220/140	270/160
Average	150/102	175/100
Blood chemical findings, mg./100 cc		
Nonprotein nitrogen	34.0	32.0
Uric acid...	6.4	6.4

TABLE 2—*Treatment Survey and Mortality*

Group 1	
Stroganoff method ...	53
Morphine sulfate	
Chloral hydrate	
Cesarean sections with 2 deaths.........	4
Mortality	14
Combined method	47
Barbiturates and $MgSO_4$ intramuscularly	
Intravenous hypertonic dextrose	
Cesarean sections. ..	1
Mortality.	8
Total uncorrected mortality	
Maternal......	22
Fetal (17 were less than 2,000 Gm.) ..	36

Group 2	
Combined method of Dieckmann	58
Barbiturates and $MgSO_4$ intramuscularly	
Intravenous hypertonic dextrose	
Morphine sulfate	9
Cesarean sections	5
Mortality......	10
Combined method plus veratrum viride...	42
Cesarean sections with 1 death.......	7
Mortality...	4
Total uncorrected mortality	
Maternal.....	14
Fetal (4 were less than 2,000 Gm.) ..	20

The results of the chemical analyses performed on the blood in all cases are in accord with those in previous reports. In group 1 the average level of nonprotein nitrogen was 34 mg. and that of uric acid, 6.4 mg. per hundred cubic centimeters of blood, while in group 2 the findings were 32 mg. and 6.4 mg., respectively.

Consideration of the two groups of eclamptic patients totaling 200 cases provides some interesting, although for the most part negative, observations. The fact that the patients in these two groups live on opposite sides of the earth and that one group comes from a cold, dry climate and the other from a moist, warm climate made no difference, nor were differences due to race or color significant. The incidence with reference to parity was almost identical. In both groups the disease occurred among the underprivileged or indigent, who could be expected to have nutritional deficiencies.

From May 1, 1941 to Dec. 31, 1945, which is the time considered in group 2, there were 23,352 deliveries in the private hospitals of the city of Memphis, Tenn., and in 68 of these the patients had eclampsia. This is an incidence of 0.29 per cent. Most of the 68 patients were on the charity services of the hospitals.

PATHOLOGY

When the liver of a woman who died in eclampsia is cut across, the cut surface may feel granular. Small, elastic walls of the blood vessels have retracted, and the protruding thrombi provide the granular sensation. The increased clotting properties of the blood are probably concerned in this mechanism. Ischemic necrosis and hemorrhage are apt to be found in the portal spaces. Thromboses of the radicles of the portal vein have long been considered important in this mechanism. However, angiospasm which affects the hepatic arterioles may also be concerned.

Lesions of the kidney are not constant and have been considered either primary or secondary in this disease. The latter view is probably correct. Various degrees of nephritis occur but are not constant. Of importance is the frequency with which the glomerular tuft is found empty, which would explain the suppression of urinary excretion on the basis of angiospasm. The observation of occasional thrombi in the vessels leading to the glomerulus is also explained on the same basis. Inasmuch as the blood supply of the collecting tubules is secondary to that received by the glomerulus, it is not surprising that th[illegible] iges are first found in the tubules. [illegible][2] have shown by experimental evidence that renal ischemia is concerned with this disease, and this is in accord with clinical observations which are explained as the result of angiospasm.

The brain shows varying degrees of edema and hemorrhagic foci. Fatty degeneration of the heart and other organs is a secondary manifestation.

ETIOLOGY

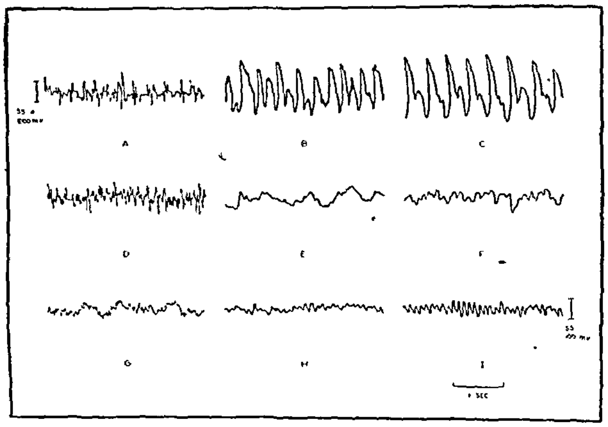
The cause of eclampsia is not known. Clinical observation and research have yielded sufficient information, however, to materially change our concept in this regard. The ophthalmologists were first to observe that the small blood vessels in the retina were constricted in the presence of preeclampsia and eclampsia. It had long been known that the volume of urine was decreased and that the degree of suppression corresponded to the severity of the disease. There were those who recognized that the decrease in the volume of urine could also be explained on the basis of angiospasm. It is probable that this constriction of the arterioles is generalized not merely in the eye and kidneys but throughout the entire body. This would account for the rise in blood pressure, which is either gradual and prolonged in the preeclamptic stage or sudden when it precedes convulsions. It had also been noted that the duration of hypertension might be more important than the severity of the disease, that is, the patient who had an elevation of blood pressure which was existent for several weeks might suffer permanent renal damage, even though convulsions did not occur. However, in a rapidly developing toxemia which lasted only a few days, even though attended with convulsions, there might be no permanent damage to the kidneys. This latter observation may have led early investigators to conclude that the disease conferred an immunity.

---

[2] Dill, L. V., and Erickson, C. C.: Effect of Constriction of the Renal Arteries in Pregnancy and in Certain Endocrine States of Rabbits, Arch. Path. **31:** 68 (Jan.) 1941.

Many have believed that the placenta produces a pressor substance, but it could be reasoned equally as well that a pressor substance is always present during pregnancy but that a counteracting removal of the pressor substances is absent or diminished in cases of preeclampsia and eclampsia. It may be that the constriction of the small blood vessels alters the vessel wall sufficiently to aid in the production of edema. On the other hand, one must consider that the lack of excretion or removal of certain metabolites and steroids is concerned with the production of edema.

Also, there must be sufficient concentration of the serum proteins in the blood stream to prevent the fluid from becoming extravascular. With this in mind, we determined the number of red blood cells, the amount of hemoglobin and the total proteins in the plasma of 200 Negro women and 100 white women. All patients were pregnant. The average determinations were within normal limits and were not significant in those patients with toxemia of late pregnancy. However, in 2 eclamptic patients with total serum proteins of less than 4 Gm. per hundred cubic centimeters of blood, the administration of large volumes of plasma, totaling in each instance more than 2,000 cc., resulted in recovery of the patient. When the total serum proteins are decidedly deficient the patient may be benefited by attempts to restore the proteins to normal levels.



Electroencephalographic tracings taken in eclamptic convulsions and recovery (compare with table 4).

If the cold pressor test is applied to a patient with a moderate degree of preeclampsia the results are significant. With the patient's hand and forearm in ice water and the blood pressure recordings being taken on the opposite arm, the blood pressure rises to an alarming degree. Albumin in the urine may increase, and the patient may even have a convulsion. It is clear that the exciting cause of the elevation in blood pressure is not the constriction of the arterioles in the arm but the spread of this constriction by means of the sympathetic nervous system until angiospasm becomes generalized. One immediately wonders whether this formula could be reversible. Angiospasm in this disease seems certain and is compatible with the physiologic explanation of its causation, which was suggested by Hofbauer.[3]

ELECTROENCEPHALOGRAPHIC STUDIES

Although intracranial pressure must be considered a factor in the presence of appreciable edema this thesis does not explain the so-called dry type of eclampsia or, probably, that with mild or moderate edema. We thought it desirable to determine whether the immediate onset of convulsive seizures is due to angiospasm as well as to the rise in blood pressure and the decrease in the volume of urine.

TABLE 3.—*Blood Findings in Pregnant Women of the Midsouth*

	Red Blood Cell Count	Hemoglobin, Gm./100 Cc.	Plasma Protein, Gm./100 Cc.
200 unselected Negro patients			
Highest	5,580,000	14.5	8.60
Average	4,140,000	11.2	6.83
Lowest	2,500,000	8.5	5.50
23, or 11.5%, with toxemia			
Highest	5,370,000	14.5	8.60
Average	4,310,000	11.5	7.13
Lowest	3,490,000	9.2	6.00
100 unselected white patients			
Highest	5,600,000	14.5	7.60
Average	4,080,000	11.6	6.50
Lowest	2,860,000	7.8	5.50
4, or 4%, with toxemia			
Highest	4,300,000	12.4	7.40
Average	3,950,000	11.3	6.80
Lowest	3,270,000	10.5	6.40

The use of electroencephalographic tracings to detect the abnormal functioning of neurones in the cerebral cortex during the convulsive and preconvulsive stages of eclampsia as well as the evidences of improvement in cortical function in relationship to treatment was suggested by Dr. T. S. Hill, professor of psychiatry at the University of Tennessee College of Medicine.

The accompanying figure presents samples of the electroencephalographic tracings made on an eclamptic patient during a convulsion and as the patient improved coincident with, and subsequent to, the administration of a continuous caudal analgesia. These tracings were recorded and are herewith described (table 4) by Dr. Hudson Jost, director of the psychophysiological laboratories of the department of psychiatry. In comparing the abnormal tracings with the normal in the illustration, reference should be made to tracing *I* (table 4), the only essentially normal one obtained on this patient.

TABLE 4.—*Blood Pressure and Medication in Eclamptic Convulsions*

Tracing	Date	Time	Medication	Blood Pressure	Sensitivity
A	4/10/46	11:48 a. m.		170/120	SS —4
		11:55 a. m.	30 cc. metycaine hydrochloride 1.5%		
B	4/10/46	11:56 a. m.		150/120	SS
		12:05 p. m.	15 cc. metycaine hydrochloride 1.5%		
C	4/10/46	12:15 p. m.		140/ 90	SS
		12:20 p. m.	15 cc. metycaine hydrochloride 1.5%		
D	4/10/46	12:21 p. m.		150/120	SS —4
E	4/10/46	12:25 p. m.		60/ 10	SS
F	4/10/46	12:37 p. m.		100/ 55	SS
G	4/11/46			136/110	SS
H	4/17/46			108/ 64	SS
I	4/22/46			100/ 75	SS.

The tracings are given in the accompanying graphic record.

Tracings *A* through *F* are samples of recordings taken at intervals during the administration of metycaine hydrochloride from *11:48 a. m. to 12:37* p. m., April

---

[3] Hofbauer, J.: The Evolution of the Biologic Concept of the Etiology of Late Toxemia, Am. J. Obst. & Gynec. 51: 514 (April) 1946.

10, 1946. *A* was recorded during a generalized eclamptic convulsion immediately prior to the administration of metycaine hydrochloride when the blood pressure was 170 systolic and 120 diastolic. *D* is that of a tonic convulsion which appeared before the blood pressure was lowered by the caudal analgesia. The amplitude of both *A* and *D* is decreased 97 per cent in comparison to the standard sensitivity wherein 1 cm. equals 100 microvolts, as shown in the other sample tracings. The calibration for tracings *A* and *D* is given in the upper left hand corner of the figure. The standardization for the remaining tracings is shown in the lower right hand corner of the figure. *B* and *C* depict the interconvulsive pattern which is similar to the wave forms found in petit mal epilepsy. *E* shows the electroencephalographic tracing after the blood pressure had dropped to 60 systolic and 10 diastolic and the patient was comatose. *F* was obtained when the blood pressure was reestablished at 100 systolic and 55 diastolic. It will be seen that the cortical potential pattern is not completely normal, although the amplitude of the waves had decreased and their frequency had increased to produce a somewhat less abnormal pattern.

Tracings *G, H* and *I* depict samples of recordings made at intervals of one, seven and twelve days. *G* represents an electroencephalographic tracing taken on April 11, 1946, the day after delivery when the blood pressure was 136 systolic and 110 diastolic. *H* was obtained seven days later, at which time the blood pressure was 108 systolic and 64 diastolic and the electroencephalographic tracing was almost normal. The final sample, *I*, was taken twelve days following delivery, at which time the tracing was essentially normal.

TREATMENT

Prenatal care has done much to decrease the incidence of eclampsia. Its prevention by frequent prenatal visits is preferable to the best methods of treatment. One should adopt the attitude that every pregnancy is a potential cause of toxemia. With a systolic blood pressure of 135 mm. of mercury or more, the patient must be advised in regard to the intake of fluids and cautioned against the use of sodium chloride. Advice on elimination and a proper diet which includes the minerals, vitamins and first class proteins is of especial importance. A sudden increase in body weight is significant, as this is the first indication of a failure of renal function. One indisputable factor is the seriousness of a decrease in the volume of urine. In the presence of oliguria the patient's condition will deteriorate, and in the presence af anuria death is certain. Elimination by means of sweating and purging has been unsuccessful, and therefore all methods of medical management have depended for success on elimination through the kidneys regardless of the intent of the medical attendant. For example, the well known method of Stroganoff recommended the use of large amounts of morphine and chloral hydrate. As the central nervous system was depressed to the extent that respirations were definitely slowed, sufficient relaxation of angiospasm probably resulted. If the volume of urine increased the patient might recover, but if anuria persisted death ensued. The Temple treatment of Arnold and Fay suggested repeated spinal drainage and the intramuscular use of magnesium sulfate. In the presence of extensive edema cerebral edema is no doubt a factor, and therefore the treatment has been effective in some cases. The use of large doses of the barbiturates probably has the same effect of relaxing angiospasm.

Veratrum viride or its derivatives have been used in the treatment of eclampsia since the middle of the seventeenth century, and the relaxation of angiospasm is accomplished directly by the use of this drug. We have been using a modification of the combined method of treatment suggested by Dieckmann, and for an accurate description of the method one should refer to his several publications. We agree with him that at least 500 cc. of 20 per cent dextrose solution should be given intravenously, provided that cardiac insufficiency and/or pulmonary edema is not to be expected. The injection may be repeated in six to eight hours and the volume of urine determined accurately by opening a previously inserted indwelling catheter. Sedative drugs, such as a 25 per cent solution of magnesium sulfate, may be given intramuscularly or occasionally intravenously, and various barbiturate compounds, preferably phenobarbital sodium, may be given in doses of 0.3 Gm. intramuscularly as necessary. We had long considered the use of paravertebral block to include the sympathetic nerves to the region of the kidneys but did not carry out this procedure. On 6 eclamptic patients we relieved angiospasm by means of continuous caudal analgesia administered by Dr. Robert A. Hingson. The number is so small that the fact that all survived is not significant. However, after the block was established to include the kidney level and with the aid of hypertonic dextrose solution diuresis was established, which in our opinion was on the basis of the relaxation of angiospasm.

The word toxin in regard to the toxemias of late pregnancy will probably in time be supplanted by the word hormone. The observations of various investigators are now at such variance that a review is only confusing. It is probable that the placenta does not produce a toxin but rather stimulates the production of pressor substances which are not sufficiently destroyed by the liver. Therefore the factor of nutrition enters into the problem and is in agreement with the fact that our patients are usually the indigent and the malnourished.

Although the incidence of eclampsia was reduced during the starvation period after World War I, and this situation will probably be found in regard to World War II, nevertheless pregnant women were obtaining sufficient protective substances in their decreased diets. The deficient diets of both groups reported are similar. The Chinese poor eat rice, millet and koa-liang, a kind of corn. The poor of the Midsouth eat cornbread, salt fat pork and various types of beans. It is clear that the first class proteins, vitamins and, to some extent, essential minerals are deficient in the diets of the two groups.

In considering eclampsia one of the first questions is "Where do we see eclamptic patients?" Regardless of the geographic location it is clear that for the most part we see them on the charity services of the hospitals. This was apparent from our observations in the Philippines (1942-1943) where, at the Philippine General Hospital, we saw a large number of eclamptic patients; they too were among the indigent group.

COMMENTS AND SUMMARY

Study of the data contained in this report brought out several factors. Race did not seem to be significant. There was no appreciable difference in the two groups in regard to the ages and parity of the patients concerned. The stage of gestation was almost identical. The blood chemical findings are very similar, and the lower blood pressures in group 1 are in accord with the low blood pressures which are in general found among the Chinese. The high incidence of eclampsia among the Chinese is significant, and the incidence in our group in the Midsouth is unusually high. This high incidence will be reduced only when the public is better informed on the benefits of prenatal care, which includes advice in regard to a properly balanced diet during pregnancy. We must look far into the future before being able to report such a small incidence of eclampsia, namely, 0.018 per cent, as was reported by Davis and Gready[4] of the Chicago Lying-In Hospital. Our mortality rate among eclamptic patients in either Peiping, China, or Memphis, Tenn., does not compare favorably with that reported by others. In the reduction of this mortality not only is an appreciation of the value of prenatal care essential but also it would be wise to adopt uniformly a review committee to investigate all maternal deaths, as was done in 1934 in Philadelphia and reported by Williams.[5]

Our figures on the red blood cell counts and hemoglobin determinations are somewhat lower than those commonly reported. In the toxemic group they are difficult to evaluate because of the blood dilution of pregnancy and the blood concentration associated with the toxemias. Total plasma protein determinations were not significant except when appreciably lowered.

Rosenbaum and Maltby[6] have suggested that an electroencephalogram might be used to predict the development of eclampsia in patients. We had long hoped to demonstrate that the immediate cause of the convulsions of eclampsia is or may be angiospasm. Electroencephalographic tracings were made on 6 eclamptic patients during convulsions. All the tracings are similar, but those used in this report were more clearcut. It is significant that an eclamptic patient treated with veratrum viride gave the same type of tracing. One might contend that the alteration in the tracings is the result of the fall in blood pressure, and this is probably correct, for the fall in blood pressure is due to the relief of angiospasm whether by the use of regional nerve blocking or by the action of a drug, such as veratrum viride. We are not experts in the use of the electroencephalograph but are willing to accept the advice and interpretation of those who are. It is the opinion of Drs. Hill and Jost that these tracings demonstrate anoxemia of the brain which we consider to be due to angiospasm. However, it is clear that in the presence of extensive edema other factors require consideration. It seems reasonable to conclude that angiospasm is probably both the immediate basis for the syndrome of eclampsia, accounting for the gradual or sudden rises in the blood pressure and the suppression of urinary excretion, and the exciting cause of the convulsive seizures in some patients. The placenta is probably the stimulating factor in the patient's production of pressor substances. Methods of medical management rely for their success on the relaxation of anginospasm directly or indirectly.

ABSTRACT OF DISCUSSION

Dr. Robert N. Rutherford, Seattle: I enjoyed Dr. Whitacre's paper a great deal because he presented two series of cases from diametrically opposed racial groups of the same general sociologic level, and yet the figures from both China and Tennessee could be interchanged without significant alteration. The potential value of the electroencephalogram as an agent in predicting which patients with impending preeclampsia may go on to a more serious clinical state is an interesting observation. The investigative work which has been done suggests that malignant angiospasm or malignant vasospasm is the cause. An analogy might be drawn between the malignant angiospasm of the eclamptic state and arteriosclerosis. If the angiospasm is maximal in the cerebral circulation, there is toxemia with convulsions (in arteriosclerosis, a cerebral accident). If it hits largely in the kidney, the anuria-oliguria problem must be combated, with its final stage the cortical necrosis of the kidneys. And all physicians are aware of toxic separation of the placenta, in which the emphasis is placed on the uterine circulation; angiospasm has done its worst damage there. If this is accepted as the concept of deranged physiology, the cause is still unknown. Logically it would concern the placenta, since that is the only new endocrine organ introduced into the pregnant body and it is removed at the end of pregnancy. The line of investigation most attractive to the discussant is the work on acetylcholine esterase, the enzyme produced for the destruction of acetylcholine by the placenta as by other tissues of the body. If an imbalance exists, the angiospasm is possibly due to an overemphasis of the influence of the sympathetic nervous system on the cardiovascular-renal system. Hence, the abnormal endocrine pattern, the disordered laboratory findings and the confused clinical pictures spring from this imbalance which is caused by abnormal production of this enzyme by the placenta. The latest weapons for application in this eclamptogenic syndrome aim at releasing the malignant vasospasm. First is veratrum viride, which gives increased parasympathetic effects: it is an old drug whose use has been revived with a better understanding of its physiologic application. The other is the use of continuous caudal or spinal anesthesia in a variety of ways which temporarily relieve the angiospasm.

Dr. R. Luikart, Omaha: Since the advent of sulfonamide drugs and penicillin chemotherapy many of the obstetric complications due to infection have almost disappeared. Toxemia of pregnancy has become the number one enemy. Dr. Whitacre put his greatest emphasis on the study of eclampsia per se but said little of prophylaxis. The high mortality in such cases as here reported, which have been so well managed, makes one realize that prevention necessarily is the treatment of choice. A series of more than 1,000 obstetric patients who were organically sound and of normal weight reached term without the development of toxemia in 1 patient, i. e., no systolic blood pressures above 140 or diastolic above 85 and no appreciable albuminuria or retention of fluid. This was accomplished by holding the patient's gain in weight to not more than 2 pounds (0.9 Kg.) in any one month. The diet was high in protein, mineral and vitamins (the blood-making and baby-building foods). The amounts of carbohydrates and fats in the diet were restricted in accordance with the patient's gain in weight. The results in this series were so gratifying that in my opinion a selected diet, proper ingredients and amounts along with good hygienic prenatal care will go far to reduce eclampsia and obstetric deaths.

Dr. Frank E. Whitacre, Memphis, Tenn.: In regard to Dr. Rutherford's discussion about the cause of eclampsia as related to the placenta, it seems to me that the placenta is in all probability the stimulating factor—not that it produces any toxin. It is very probable that the word toxin will in time be replaced by the word hormone, but at present the results of the work of the numerous investigators are at such variance that to review them would only be confusing. I want to thank Dr. Luikart also. Prophylaxis, of course, is the *only* means of effectively treating disease. The attack on eclampsia will be carried out in the same way as the attack on other disease entities; it must be made by combat teams of the men skilled in basic science working in conjunction with the clinicians.

---

[4] Davis, M. E., and Gready, T. G., Jr.: A Review of the Maternal Mortality at the Chicago Lying-In Hospital, 1931-1945, Am. J. Obst. & Gynec. **51**: 492 (April) 1946.

[5] Williams, P. F.: The Preventive Aspects of Maternal Mortality, J. Michigan M. Soc. **42**: 25 (Jan.) 1943.

[6] Rosenbaum, M., and Maltby, G. L.: Cerebral Dysrhythmia in Relation to Eclampsia, Arch. Neurol. & Psychiat. **49**: 204 (Feb.) 1943.

CONCEPTS DERIVED FROM INVESTIGATIONS PERTAINING TO HIGH ALTITUDE FLIGHT

CAPTAIN A. R. BEHNKE (MC), U. S. NAVY
Bethesda, Md.

In the early days of aviation, just preceding World War II, it became apparent that the structural, biomechanical, psychologic, physiologic and chemical descriptions of man were scarcely more than fragmentary when he was considered in relation to the problems inherent to his most recently created environment. Of necessity considerable progress was made during the war in adding to these descriptions. Increased knowledge has afforded him at least partial protection against the formidable stresses of flight. In many cases expedient or makeshift devices based on none too well established conclusions have been employed in his behalf. Nevertheless, at the end of the war man was flying at speeds of about 500 miles per hour and at altitudes approximately 8 miles above the earth.

The problems in aviation medicine are becoming even more numerous and more difficult in this postwar era, in which man, in flight, is pursuing and will soon be outdistancing sound itself. The chief medical problem, protection against high accelerative forces, suggests the difficulties confronting the physiologist in altering, for example, a homeostatic circulatory arrangement that evolved in an environment of relatively slow motion. The aviation engineer of necessity must now adapt his design to conform with the tolerances and the capabilities of the man.

TABLE 1.—*Average Pulse Rate Response to Exercise* of Forty Men on Two Occasions (Interval of Five Days)*[4]

	Standing Pulse Rate		Pulse Rate 5 to 20 Seconds After Exercise		Pulse Rate 105 to 135 Seconds After Exercise	
Date	June 7	June 12	June 7	June 12	June 7	June 12
Range ..	64-116	64 116	23 39	23 39	32 58	29 57
Mean	92	88	33	32	44 6	42
Median	92	88	33	31	43	41
Interquartile range †	80 104	80 96	30 36	28-35	41-49	35 49

* Twenty step ups in thirty seconds on a platform 18 inches high, the same leg being used, timed with a metronome.

† Tenth and thirtieth pulse rate values (25 per cent above and below median), when these values are averaged in order of increasing magnitude.

It is my purpose in this paper to enumerate some of the concepts and conclusions derived from extended research programs of the National Research Council, the Army and the Navy which are of interest to doctors of medicine and to mention some of the investigations currently under way which may have significant medical implications.

SELECTION TESTS AND EVALUATION OF PERFORMANCE

The exemplary accomplishments in administration, selection and training have made possible the expansion in army and naval aviation medicine and the preparation of as many as 50,000 army men monthly for combat duty. The psychologist has played a significant role in these achievements. In applying the same effective principles underlying the medical history he has replaced intuitive methods for selection of aviation candidates by a predictive procedure employing biographic information in a statistically exact arrangement. Thus in an analysis of 8,615 records it was found that the men who scored A on the inventory had a failure rate of only 11 per cent, while those who scored E had a failure rate of 59 per cent.[1]

For evaluation of combat performance, Capt. J. G. Jenkins, H(S), U.S.N.R., introduced a novel "nominating technic." Each pilot interviewed was requested to submit the names of four pilots, two with whom he would like to fly in combat and two with whom he would not like to fly in combat. The respondents indicated the reasons for their selections. This procedure allowed for various comparisons with the ratings obtained from preflight training selection tests. The significant correlation between physical fitness and combat performance[2] is of special interest. Physical training records of 1,354 men were analyzed, of whom 707 had been chosen one or more times for the "low" combat group and 647 one or more times for the "high" combat group. The results indicated that the more desirable combat naval aviators in World War II (as nominated by their fellow pilots) tended to be taller, stronger and more athletically inclined and physically fit than were the less desirable aviators. Further, the more desirable combat aviators did significantly better in the physical training phases of the preflight program than did the men less desired as partners in combat.

Physical fitness tests as embodied in the Army Air Forces' battery and the step-up test[3] and its modifications have been of value chiefly for group comparisons (table 1)[4] or for an individual if a pattern of responses has been established. The importance of the age factor of course has been demonstrated in all military operations calling for endurance, agility and quickness of response. It is observed also in a quantitative manner as a sharp decline of endurance muscular performance with age in homogeneous groups of men 18 to 30 years of age who have engaged in the same physical training program.[5]

Pulse rate response to moderate exercise of only thirty seconds' duration, as in a step-up test, would appear to have wide application not only in the services but in routine industrial medical examinations, especially in those instances in which exposure to toxic substances may occur. An unusual shift of the mean group value after a "normal" curve had been established (fig. 1)

From the Naval Medical Research Institute, National Naval Medical Center.

Read in the symposium on "Physiology of High Altitude Flight" before the Section on Pathology and Physiology at the Ninety Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

This article has been released for publication by the Division of Publications of the Bureau of Medicine and Surgery of the United States Navy. The opinions and views set forth in this article are those of the writer and are not to be construed as reflecting the policies of the Navy Department.

1. Jenkins, J. G.: Prediction of Flight Training Performance by Biographical Data, J. Aviation Med. **15:** 131-135 (April) 1944.

2. Channell, R. C., and Fosberg, I. A.: Unpublished data, March 1946.

3. Behnke, A. R.; Welham, W. C.; White, W. A., Jr., and Pace, N. The Step Up Test to Evaluate Fitness for Physical Exertion in Healthy Men, Research Project X-134, Report No. 2, Naval Medical Research Institute, Dec. 6, 1943.

4. Behnke, A. R., and Duffner, G. J.: Environmental and Physiologic Studies Aboard Air Cooled Hospital Ships, Research Project X-205, Report No 4, Naval Medical Research Institute, Oct. 10, 1945.

5. Pace, N.: Influence of Height, Weight and Age on the Step Up Test· Unpublished Analysis of Data Obtained on Naval Personnel, Project AVX-36 (Fl Z), United States Navy Department, Bureau of Medicine and Surgery, September 1942. Karpovich, P. V., and Green, E. L. Physical Fitness and Age of Army Air Forces Personnel, J. Aviation Med **17:** 96 99 (Feb.) 1946

would serve to call attention to deleterious environmental factors in a manner similar to that outlined by Foulger and Fleming[6] on the basis blood pressure recordings. To be of value, however, an exercise test must be carried out at the same time each day and the pulse rate must be ascertained accurately. As with any laboratory procedure, if carried out with utmost care such testing constitutes a most helpful adjunct but not an absolute criterion in evaluating fitness for muscular exercise and the degree of deviation from "normal" performance.

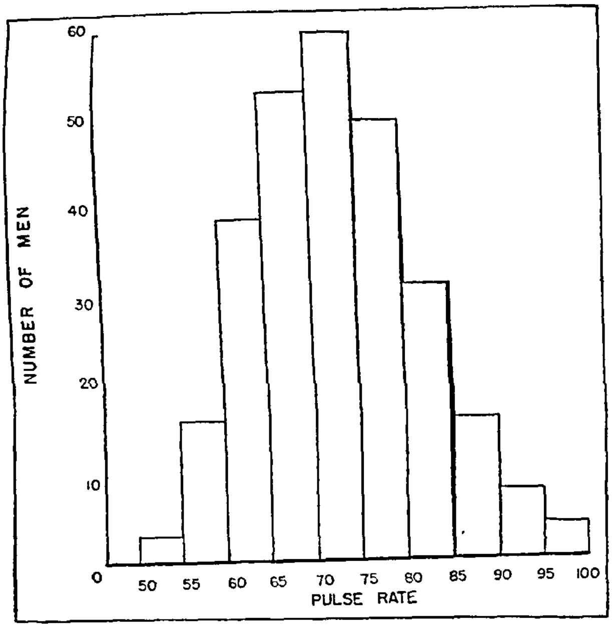


Fig. 1.—Histogram[3] showing the distribution of pulse rates obtained on a group of 281 Marines following exercise consisting of 20 step-ups to a height of 18 inches during a period of thirty seconds. The score recorded is the summation of pulse rates B + 2C, where B is the pulse rate five to twenty seconds after exercise and C is the pulse rate 120"-135" post exercise.

BODY COMPOSITION

Height-weight tables fail to provide accurate estimates of the amount of fat in a given individual. This estimate is of importance in military medicine, as obese persons are more susceptible to decompression sickness following both ascent to high altitudes and from diving depths. It also may be of value in describing overall fitness. From determinations of body density, employing a method of hydrostatic weighing based on the Archimedes principle of volume determination by water displacement, it appears that the specific gravity of the body varies inversely with, and is chiefly affected by, the amount of fat present.[7]

The concept that the body consists of a lean mass of constant composition and that accumulated fat is the major component responsible for alterations in specific gravity has been further strengthened by the quantitative studies of Rathbun and Pace.[8] These investigators obtained the same range of values, 1.021 to 1.097 in adult guinea pigs, as has been found for man. Aliquot fat-free samples of pulverized body tissue, including bone, yielded a value of 1.098. The inverse relationship, moreover, postulated for man as existing between specific gravity and fat content, has been established for the guinea pig (fig. 2).

The concept that the lean body mass is of uniform composition in mammalian species is further supported by the small variation in the percentages by weight of water and of combined nitrogen in aliquot samples of pulverized, fat-free tissue (fig. 3).[9]

ASCENT TO HIGH ALTITUDES (DECOMPRESSION)

Expansion of Abdominal Gas.—The increase in gas volume during ascent to altitude, which may be as great as fourfold at 30,000 feet, is frequently the cause of distressing abdominal pain. With the exception of certain food items, the origin of intestinal gas is swallowed air. Empirically, the following impressions are repeatedly strengthened: (*a*) Overdistention of the stomach and large bowel by expanding gas, even though slight, stops peristalsis and prevents elimination of gas, and (*b*) the amount of gas in healthy persons with good intestinal function is small and of the order of 200 cc. or less. Under conditions of semistarvation and the resultant poor physical condition together with a probably higher proportion of gas producing foods in the ration, it was found that one of three experimental chamber ascents had to be terminated because of gas pains. Further investigation should lead to an estimate of the degree of impairment of gastric and intestinal motility in relation to gas content of a viscus and should serve to test the validity of the hypothesis that effective alimentary function bears an inverse relation to gas content of abdominal viscera.

Explosive Decompression.—The engineer has been required to provide pressurized cabins in aircraft designed for great altitudes in order to prevent extreme decompression of the personnel. In such pressurized aircraft the possibility of sudden loss of pressure creates the hazard of explosive decompression, involving expansion of abdominal gases, overdistention of the lungs and even boiling of the blood and body fluids at body temperature. It has been found by German investigators that explosive decompression, irrespective of rate and magni-

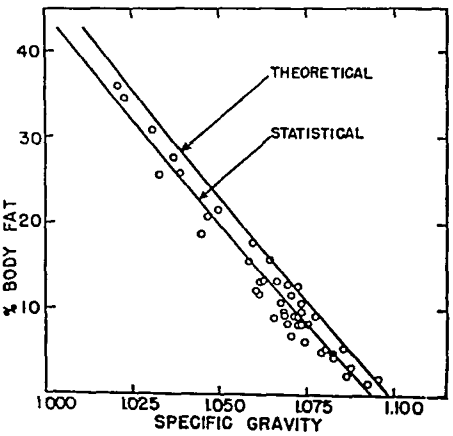


Fig. 2.—Percentage of body fat plotted against specific gravity for the guinea pig. The range of values is the same as those for man (after Rathbun and Pace[8]).

---

[6] Foulger, J. H., and Fleming, A. J.: Industrial Exposure to Toxic Chemicals, J. A. M. A. **117**: 831-836 (Sept. 6) 1941.

[7] Behnke, A. R.: The Absorption and Elimination of Gases of the Body in Relation to Its Fat and Water Content, Medicine **24**: 359-379 (Dec.) 1945.

[8] Rathbun, E. N., and Pace, N.: Studies on Body Composition: I. The Determination of Total Body Fat by Means of the Body Specific Gravity; II. The Body Water and Chemically Combined Nitrogen Content in Relation to Fat Content, J. Biol. Chem. **158**: 667-676 and 685-691 (May) 1945.

[9] Ashworth, U. S., and Cowgill, G. R.: Body Composition as Factor Governing Basal Heat Production and Endogenous Nitrogen Excretion, J. Nutrition **15**: 73-81 (Jan.) 1938. Rathbun and Pace.[8]

tude. does not produce injury of the lungs when the glottis is open. With the glottis closed, intrapulmonic pressures of the order of 80 mm. of mercury can overdistend the lungs and produce the type of air embolism seen in submarine escape experiments with the Momsen "lung."[10] The fundamental requisite to the production of pulmonary injury is the building up of intrapulmonic pressure to a level (about 50 to 80 mm. of mercury) where alveolar vessels rupture and air is aspirated into the circulation during succeeding respirations. Protection against rapid gas expansion or boiling of the blood can be afforded by suitable application of counterpressure or by precluding the possibility of increase in volume of the body.

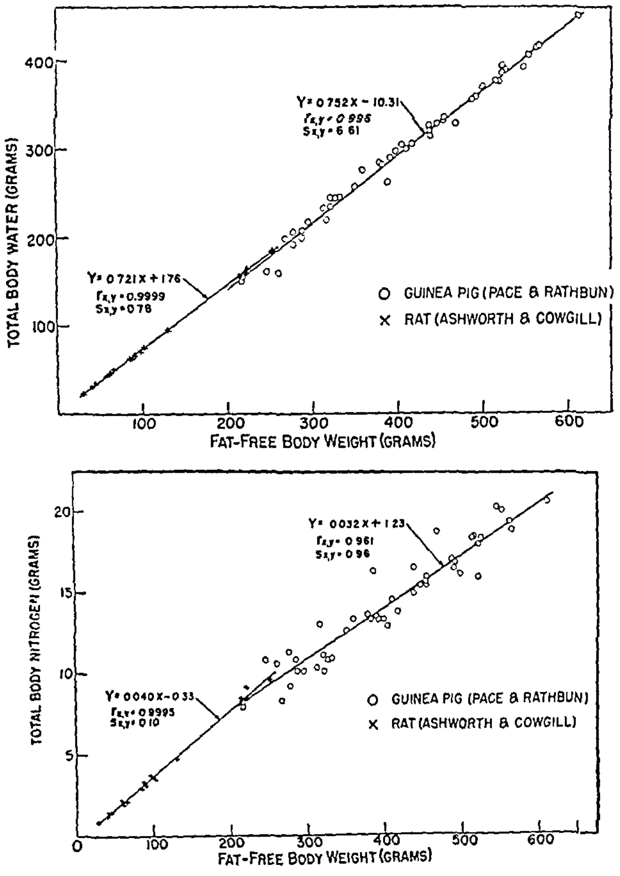


Fig. 3.—Upper graph represents total body water plotted against the fat-free body weight for each animal in our series of guinea pigs and for each animal in the series of rats studied by Ashworth and Cowgill.[9] Lower graph represents total body nitrogen plotted on the same basis. The equations were obtained by the method of least squares.[8]

Pneumothorax.—During rapid decompression spontaneous pneumothorax may arise from the overdistended lung. Gersh[11] found that when cats were rapidly decompressed gas frequently reached the mediastinum and thoracic space by dissection between visceral pleura and alveolar tissue.

Treatment of Aero-Otitis Media.—About 25 per cent of personnel in submarines and aviation will show some degree of pressure trauma in the middle ear as the result of rapid alteration (compression usually) of barometric pressure. The incidence of "ear block" sufficient to prevent rapid accommodation to compression in chamber tests usually is considerably less but may vary from 5 to 20 per cent in individuals exposed. Treatment of the chronic type of this refractory and distressing ailment was only temporarily palliative prior to the introduction of radium applications to the tubal orifices by Crowe and Baylor[12] and Crowe and Burnam.[13] This type of treatment constitutes a major advance in preventing the most common difficulty in adjusting to pressure change.[14]

Decompression Sickness.—The incidence of decompression sickness is related to the conditions underlying gas bubble formation, which fall into two groups.[15] In the first are those conditions which tend to increase the free or dissolved gas content of tissues, namely the amount of fat, the degree and duration of exposure to pressure (diving) and, following rapid ascent to high altitudes, exercise, which serves to introduce carbon dioxide into the circulation. In the second group are variables such as age, time of day, temperature, fright, injury of tissue and the postalcoholic state, which affect the circulation of blood and the transport of gas from tissues. The factor of age in the sense that the 20 year old group is less susceptible to bends than a group seven or even five years older applies even to carefully preselected men who have passed stringent physical examinations. The results of thousands of low pressure chamber runs at various aviation training centers emphasize the significance of the age factor.

This second group of factors which is associated with circulatory and vasomotor phenomena appears to affect "effective blood flow" through tissue. An appreciation of the meaning of effective blood flow through tissues is derived from curves showing gas absorption prior to and following reactive hyperemia[7] and from a comparison of the tolerance of various animal species to rapid decompression following saturation exposures at high atmospheric pressures. Man tolerates a sudden drop in pressure of 2 atmospheres to 1, the dog and cat about 4 to 1, the guinea pig 5 to 1 and the mouse 6 to 1. The tolerance of various species for rapid decompression approximates values for basal metabolic rate per unit of body weight. Even in the same species (man), bearing in mind the importance of the age factor, one would expect a fair correlation between basal metabolism and bends susceptibility in the resting state.

The symptoms of decompression sickness observed at high altitudes and those following deep sea diving are similar with one exception: the spinal cord, in some remarkable manner, escapes injury in the low pressure chamber. The importance of the factor of exercise in precipitating bends at decreased pressure appears to be related to an enlargement in size of small bubbles, which otherwise might be innocuous, by an increased formation of carbon dioxide.

"Chokes" occurring at high altitude and the development of a state of shock undoubtedly have the same cause (intravascular bubble formation) as similar symptoms following decompression from high pressures.

---

[10] Polak, B., and Adams, B. H.: Traumatic Air Embolism in Submarine Escape Training, U. S. Nav. M. Bull. **30:** 165-177 (April) 1932.

[11] Gersh, I.: Pneumothorax and Extrapulmonic Emphysema in Cats Exposed to Oxygen Under Pressure, Research Project X-192, Report No. 5, Naval Medical Research Institute, Oct. 30, 1944.

[12] Crowe, S. J., and Baylor, J. W.: The Prevention of Deafness, J. A. M. A. **112:** 585-590 (Feb. 18) 1939.

[13] Crowe, S. J., and Burnam, C. F.: Recognition, Treatment and Prevention of Hearing Impairment in Children, Ann. Otol., Rhin. & Laryng. **50:** 15-31 (March) 1941.

[14] Fowler, E. P., Jr.: Radon Treatment for Otitis Due to Barotrauma, J. Laryng. & Otol. **58:** 489-492 (Dec.) 1943. Haines, H. L., and Harris, J. D.: Aerotitis Media in Submarines, Interval Report No. 1, Research Project X-434, Medical Research Department, U. S. Submarine Base, New London, Conn. Feb. 18, 1946.

[15] Behnke, A. R.: Decompression Sickness Incident to Deep Sea Diving and High Altitude Ascent, Medicine **24:** 381-402 (Dec.) 1945.

Recapitulation of some experimental and empirical data tends to clarify the problem. Dogs, monkeys and cats can be prepared so that bubbles following decompression from high pressure atmospheres are seen to circulate in arteries and veins until their accumulated size brings about a cessation of blood movement. With the first appearance of bubbles in the blood stream,[15] respiratory rate increases and in the anesthetized dog may develop into a tachypnea of 100 respirations per minute. Blood pressure rises slightly and then falls, and pulse rate decreases (fig. 4). Arterial oxygen saturation may be reduced to one fourth, arterial carbon dioxide content increases and the arterial-venous oxygen saturation difference may be increased fourfold. The picture is that of acute asphyxia, interference with pulmonary gaseous exchange and a slowing of circulation. Varying degrees of hemoconcentration follow, depending on the degree of vascular injury produced by the asphyxia. Recovery follows restoration of circulation by recompression (fig. 4), which removes the obstructing bubbles.

In man "chokes" apparently do not develop until rather large quantities of gas have moved from the peripheral circulation into the large veins, the right side of the heart and the pulmonary vessels. The earliest sign of "chokes" is a sensation of substernal distress, felt only during deep inspiration, which frequently elicits the cough reflex. This sign has proved most useful. Dr. A. C. Ivy [16] has compared this distress with that produced by vigorous exercise prior to the development of "second wind." The sensation of substernal distress may only be transient or it may progress to frank asphyxia. Normal breathing becomes rapid, shallow and then dyspneic. The skin becomes cyanotic or ashen gray, cold and clammy. The pulse beat, at first slow and pounding, becomes thready. Paroxysmal attacks of coughing, or true "chokes," may precede loss of consciousness. The picture is one of "shock" and represents a transformation within a period usually of several hours from a state of health to one of incapacitation by an agent obstructing circulation of blood without evidence of external trauma underlying its cause. Recompression restores blood flow by removal of emboli. The transformation from the shocklike state approaching death to a condition followed by complete recovery is another example of the tremendous recuperative power of man.

The symptomatology of decompression sickness is attributed by some clinicians entirely to extravascular bubbles. This conclusion may be due in part to a faulty interpretation of x-rays; small intravascular bubbles may, as Gersh [17] has shown, appear as streaks along fascial planes. The rapid, shallow breathing (tachypnea) which does not produce substernal distress unless voluntary deep inspirations are made could be ascribed to reflex stimuli initiated by the intermittent distention of gas filled blood vessels in response to the pulmonary pressure changes accompanying respiration. The production of pain by distention of blood vessels, however, has not been demonstrated. Another possible explanation is that interference with blood supply to tissues may be responsible for the pain of "bends" and "chokes." Other hypotheses less well supported relate the cause of pain in "bends" to the presence of gas and a possible dissecting action in nerve sheaths (gas bubbles can form in myelin), in fascial planes and under the insertion of tendons. It is certain that gas can exist in and around fat cells and in joint and tissue spaces even as extensive aeroemphysema without causing pain. Furthermore, there are no pathologic changes in decompression sickness apart from destruction of fat cells that cannot be accounted for on the basis of ischemia and the presence of intravascular bubbles.

ANOXIA AND RESPIRATION

The development by Cournand and his co-workers [18] of technics to obtain blood from within the chest and even the abdomen of human beings by means of catheters and the pressure measurements possible have given great impetus to the acquisition of quantitative data to settle longstanding controversies in the field of respiration.

Diffusion Respiration.—At high simulated altitudes (47,000 feet) useful consciousness can be maintained for periods of at least three hours by increasing intrapulmonic pressures 8 to 12 inches of water above ambient pressure during an intermittent or continuous type of pressure breathing. Pressure breathing, however, involves some degree of hyperventilation with a resultant loss of carbon dioxide. The principle to be emphasized is that if the lungs are filled with pure oxygen diffusion alone will keep the blood oxygenated: respiratory movements are not essential for this purpose. At high oxygen pressures [19] and at atmospheric pressure [20] this principle has been verified. At high altitudes, however, it has not been exploited, particularly under conditions in which undue loss of carbon dioxide was not desirable.

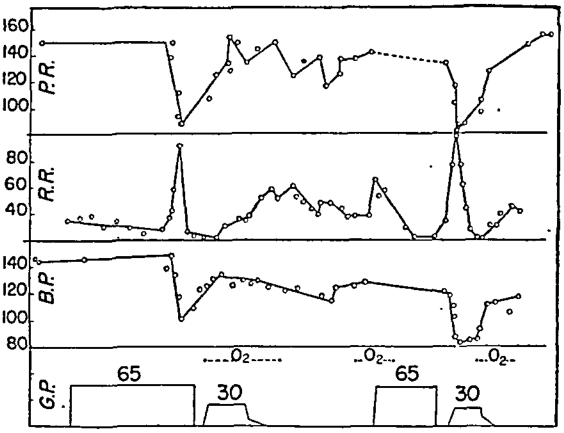


Fig. 4.—Alterations in blood pressure, respiratory rate and pulse rate of a dog decompressed in ten seconds from a gage pressure of 65 pounds after exposure of an hour and a half followed by recompression (interval of ten minutes) to a pressure of 30 pounds (oxygen) for twenty-five minutes. Pressure was then lowered to atmospheric in twelve minutes, and oxygen inhalation continued for seventeen minutes. Preceded by a period of oxygen breathing (thirty minutes), compression of the dog was again carried out at a pressure of 65 pounds for a period of forty-five minutes followed by a ten second decompression. After an interval of twelve minutes the dog was recompressed to a pressure of 30 pounds for twenty minutes (oxygen inhalation).[15]

---

[16] Ivy, A. C.: Personal communication to the author.

[17] Gersh, I.: Correlation of X-Ray and Gross Observations on Gas Bubbles in Guinea Pigs Decompressed from High Pressure Atmospheres, Research Project X-284, Report No. 9, Naval Medical Research Institute, May 9, 1945.

[18] Richards, D. W., Jr.; Cournand, A., and Motley, H. L.: The Effects on Circulatory and Respiratory Functions of Various Forms of Resuscitation Apparatus, paper presented before the 59th annual meeting of the Association of American Physicians, May 28, 1946.

[19] Behnke, A. R.: Certain Physiological Principles Underlying Resuscitation and Oxygen Therapy, Anesthesiology 2: 245-260 (May) 1941.

[20] Draper, W. B., and Whitehead, R. W.: Diffusion Respiration in Dog Anesthetized by Pentothal Sodium, Anesthesiology 5: 262-273 (May) 1944.

Pulmonary Ventilation in Relation to Anoxia.—Although increased pulmonary ventilation has long been recognized as the chief compensatory response tending to counteract anoxia when air is inhaled, there has been failure generally to control breathing during the performance of tests and to estimate altitude tolerance.

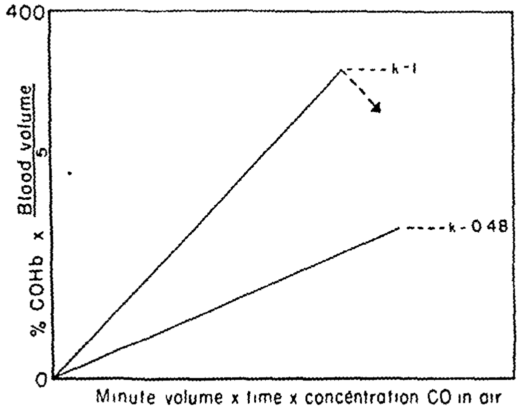


Fig 5.—Amount of carbon monoxide taken up by the blood plotted against the quantity of carbon monoxide inhaled. The slope of the line is governed by the fraction of carbon monoxide taken out of the inhaled air. This relationship holds for a carboxyhemoglobin saturation of at least 30 per cent (about 400 cc. of carbon monoxide) $k = 0.48$ was the average value for a group of healthy men studied (after Pace and others [21]).

Arterial saturation at 18,000 feet may be the same as at 10,000 feet, owing solely to hyperventilation, as indicated by the data presented in table 2.

Pulmonary Ventilation in Relation to Carbon Monoxide Uptake.—Investigations conducted during the war on carbon monoxide uptake [21] led to an accurate description of the relationship between the variables concerned and the important role played by respiratory minute volume. Up to carbon monoxide hemoglobin saturation levels of at least 30 per cent the uptake of CO may be formulated as

$$\% \text{ COHb} = \frac{\text{Min Vol (L)} \times \text{pts CO}/1{,}000 \times t\ (\text{min}) \times k}{\dfrac{\text{Blood volume (cc)}}{5}}$$

The value of *k* is of special interest, since it represents the fraction of carbon monoxide removed from each breath of air containing carbon monoxide. In graphic form, the slope of the line (fig. 5) is proportional to the value of *k*. For healthy men this value lies between 0.4 and 0.5. In patients with cardiorespiratory disease it might prove to be of diagnostic value to determine the value of *k* under conditions in which the carbon monoxide hemoglobin could be kept within safe limits (10 per cent).

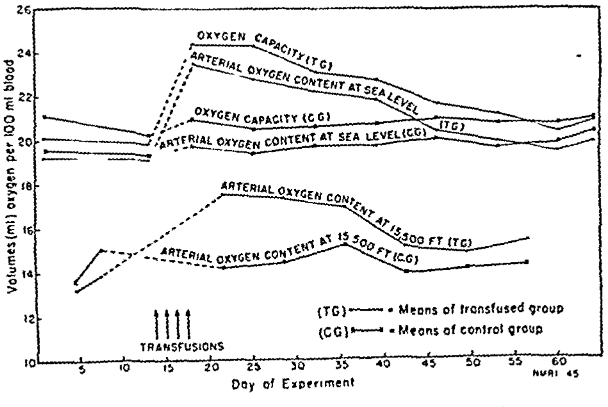


Fig. 6.—Mean blood oxygen capacity levels and arterial oxygen contents at sea level and at 15,500 feet of 10 men, 5 of whom were transfused with 2,000 cc. of a 50 per cent red cell suspension over a period of four days (transfused group) and the remaining 5 transfused with an identical volume of dextrose in saline solution (control group) over the same period [22]

Induced Polycythemia to Increase Oxygen Ceiling.—The transfusion of red blood cell suspensions into normal men appears to be the most effective method of attaining artificially the type of physiologic adaptation that takes place during natural acclimatization at high altitudes.[22] The injection of 1,000 cc. of red blood cells over a period of four days increases both oxygen capacity and content of blood (fig. 6). During the polycythemia period, which persisted about six weeks, the pulse rate following exercise when one was breathing low oxygen mixtures (at altitude) was significantly lower than control measurements (fig. 7).

ACCELERATION

Although partial protection of aviators against the effects of acceleration appears to be the chief American aviation medical research development that has contributed to superiority over the enemy, the tremendous speeds made possible by jet propulsion have created the most formidable problem in aviation. The problem resolves itself into maintaining a critical, optimal supply of blood to the brain of about 1 liter per minute under conditions that tend to cause either "blackout" (inside loop with pilot in conventional position) by reducing this supply to about one-tenth normal or "redout" (as during an outside loop) by increasing the amount several fold. Thus far, external pressure applied to the abdomen and lower extremities counteracts only one tenth of the g force that the aircraft is capable of withstanding.

TABLE 2.—*Arterial Saturation*

Normal Respiration (Min. Vol 8-10 L/m)	Arterial Saturation	Hyperventilation * (Min Vol. 16 20 L/m)
10,000 ft.	90	18,000 ft.
15,000 ft	80	22,000 ft.
18,000 ft.	*70*	*25,000 ft*

* Continuous experiment, seventy minutes at 18,000 feet, fifteen minutes at 22,000 feet and fifteen minutes at 25,000 feet (Steele, J. M.; King, B. G.; Goldman, D., and Behnke, A. R.: unpublished data, Naval Medical Research Institute, 1945)

The need to alter blood flow under the influence of high g forces by application of pressure over large areas of the body developed from the investigation begun in 1933 by Capt. J. R. Poppen (MC), U.S.N. He demonstrated by experimental flights that a great reduction in blood pressure to the head occurred under the conditions productive of "blackout" in the pioneer naval dive bombing maneuvers.

Poppen established the basic principle of circumventing splanchnic blood pooling during acceleration by means of an abdominal belt, but he was only partially successful because the lower extremities were not included in the pressurized area.

---

[21] Pace, N., Consolazio, W. V.; White, W. A., Jr., and Behnke, A. R.: Formulation of the Principal Factors Affecting the Rate of Intake of Carbon Monoxide by Man, Am. J. Physiol., to be published.

[22] Pace, N.; Consolazio, W. V., and Lozner, E. L.: The Effect of Transfusions of Red Blood Cells on the Hypoxia Tolerance of Normal Men, Science **102**: 589-591 (Dec. 7) 1945. Pace, N., Lozner, E. L.; Consolazio, W. V.; Pitts, G. C., and Pecora, L. J.: The Increase in Hypoxia Tolerance of Normal Men Accompanying the Polycythemia Induced by Transfusion of Erythrocytes, Project X-524, Report No. 2, Naval Medical Research Institute, May 10, 1946.

The ingenious studies at the Aero Medical Unit of the Mayo Clinic have revealed in a quantitative manner the striking increase in protection by a comparatively small increase in pressurized area in the chest region. During centrifuge runs the degree of added protection provided by immersion in water at the level of the xyphoid was 0.9 g. When the water level was raised to the level of the third rib, the degree of protection was increased to 1.7 g.[23]

In further experiments carried out by Lambert[24] the relationship of retinal ischemia (fall in ocular blood pressure) to "blackout" was demonstrated. Peripheral vision was lost when the effective systolic blood pressure to the eye (systolic pressure at the head level minus intraocular pressure) was reduced to about 20 mm. of mercury. In oxygen poisoning a similar type of functional, rapidly reversible "blackout" (loss of vision without loss of consciousness) occurs in association with derangements in blood pressure and possibly in disturbances of tissue oxidative processes and retinal circulation (fig. 8).

With reference to the development of protective anti-g suits it may be said that even after basic physiologic principles had been clearly established it required a great deal of effort and time (1941 to 1944) to provide a garment acceptable to aviators and effective in aircraft. Only through the close cooperation of army and navy officers, civilian scientists and manufacturers was it possible to incorporate scientific principles in the design and production of practical and acceptable products. The history of the anti-g suit illustrates the huge integrated effort stemming from good administration that is required to put into field operation a protective device based on rather obvious principles.

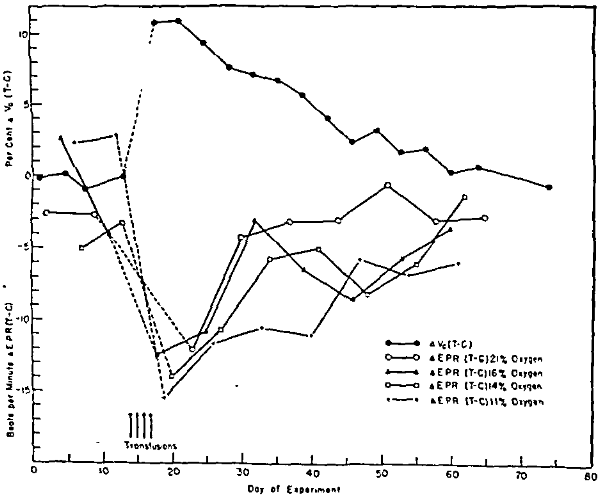


Fig. 7.—Uppermost curve (solid circles) represents the difference (ΔV_c) of hematocrit values between the transfused group (T) and the control group (C). The four lower curves represent the difference in exercise pulse rate (Δ E. P. R.) between the transfused groups (T) and the control group (C) while breathing the various mixtures of oxygen and nitrogen. The four transfusions of 500 cc. each are indicated by arrows.[22]

The approach to sonic speeds by means of the principle of jet propulsion and the possibility of human participation in rocket propulsion and its attendant supersonic speeds call for a radical extension of the range of individual protection. Protective measures must be worked out at the time the engineer formulates his plans so that they may be incorporated in the aircraft design.

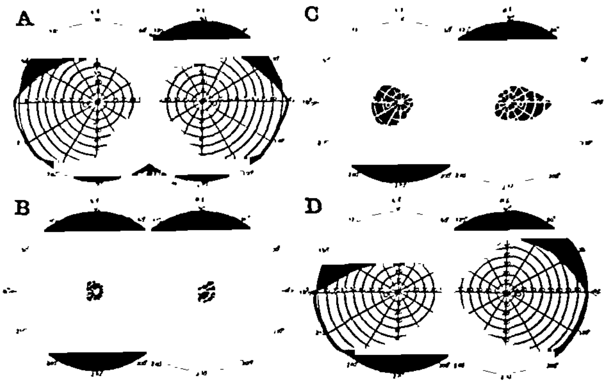


Fig. 8.—Perimetric measurements made before and after three and one-half hours' oxygen breathing at 3 atmospheres pressure (30-pound gage). *A,* normal field limits; determinations made with the Ferree-Rand perimeter and exposure method with 7 foot-candles illumination. *B, C* and *D,* field limits five, twenty-five and fifty minutes respectively, after three and one-half hours' oxygen breathing; observations made at atmospheric pressure with a black perimeter of 25 cm. radius illuminated by a blue bulb placed behind and above the observer's head; moving stick stimuli were used and checked by the exposure method; test object was a white disk 6 mm. in diameter (from Behnke, Forbes and Motley. Am. J. Physiol. **114:** 436, 1936).

PROTECTION AGAINST INJURY

Investigation of methods of protecting personnel against crash injury from impact forces constitutes a vitally important part of the research programs of the military services and the Safety Bureau of the Civil Aeronautics Board. The successful accomplishment of such studies is of value not only to aviation but to all fields of locomotion. An aircraft may be almost completely demolished and yet the human body may escape injury. On the other hand, the body may be crushed under conditions in which the fuselage is relatively intact. It also happens that in some crashes one or two of the crew will be killed while the others virtually are unharmed, as the pioneer studies of DeHaven have pointed out.

The resolution of these apparent incongruities may be accomplished by reference to two basic principles long employed by engineers to protect fine instruments against tremendous explosive forces transmitted through the steel hulls and decks of ships ("solid blast"[25]). The first is to eliminate injurious transient peak forces developed in impacts by dissipating the energy over a longer period of time. The second principle, closely integrated with the first, is to provide protective materials capable of absorbing, without recoil, part of the energy imparted by impact forces.

The type of protection devised to mitigate "solid blast" injury illustrates the first principle. Thus, if a metal loop is placed in the heel of a shoe, the compression of this loop through a distance of 1 inch may be sufficient to absorb the energy of peak acceleration and lower the impact force on the body itself to a level below the limit of tissue tolerance Tests of some of these materials can be made under conditions of static loading, although their response may not be the same under dynamic loading conditions. If a compression load of 1,000 pounds is necessary to break the tibia, for example, the protective material used must undergo deformation under a lesser static load in order to be effective.

---

[23] Code, C. F.; Wood, E. H., and Baldes, E. J.: Hydrostatic Anti-Blackout Protection, Federation Proc. 4:15 (March) 1945.

[24] Lambert, E. H.: The Physiologic Basis of "Blackout" as It Occurs in Aviators, Federation Proc. 4:43 (March) 1945.

[25] Barr, J. S.; Draeger, R. H., and Sager, W. W.: Solid Blast Personnel Injury, Mil. Surgeon 98: 1-12 (Jan.) 1946.

The body does not react as a rigid mass when subjected to impact force but behaves as an articulated system containing such shock absorbing materials as intervertebral disks, which serve to absorb the energy of impacts. Only a small part of the energy from a blow on the heels, for example, may be transmitted to the base of the skull.

In aviation the second protective principle was utilized by Bierman, Wilder and Hellems,[6] who, using undrawn nylon and covering wider and less vulnerable areas of the body in a body harness designed ultimately to protect the aviator, were able to reduce to about one-fifth the impact force that otherwise would reach the body. This nylon material stretches without recoil under draw loads well under the minimal force required to produce significant tissue injury.

Intensive studies to determine the limit of trauma to vulnerable parts of the body, the employment of protective material to absorb part of the energy of impact forces, the further elimination by "streamlined" construction of sharp corners and edges and even the incorporation of energy absorbing materials in compartment and cockpit construction give the greatest promise of reducing the high injury and mortality rates attending crashes arising from all types of mechanical locomotion. Whether, for example, safety belts will be worn in automobiles depends on the character of American temperament. Their protective value, however, is certain.

PREVENTION OF ACCIDENTS

In aviation, as in medicine, remedies are at best expedients; the principal objective always will be preventive measures by elimination of injurious factors. Perhaps the most recent achievement in aviation medicine is the fostering of the realization that the effectiveness of the machine depends on the degree to which it is designed to take advantage of the capabilities of man. Human factors have come to play a significant role in aircraft design; the expression "physiologic cockpit" (DuBois) is generally accepted. The doctors of medicine, the doctors of philosophy and other aeromedical personnel are beginning to plan their investigations with engineers at the drawing board and test their findings in experimental aircraft.

As the knowledge of the human structure, physiology and psychology is increased we shall be able to describe man adequately and list his specifications in such a way that tr ng methods and engineering design will permit maxi ploitati of his abilities. To paraphrase a succ eut Comdr M. C. Shelesnyak, H(S). ns of yesterday were "fit- ting th the solution to today's problem imal effectiveness of pilot per degree of safety, "fit "

H K The Restraining 6, Naval

INTESTINOVESICAL FISTULA

ROGER W. BARNES, M.D.
and
MALCOLM R. HILL, M.D.
Los Angeles

The presenting symptoms of intestinovesical fistula are nearly always those of irritation of the bladder. The urologist is therefore consulted in order to assure a correct diagnosis. It happens too often, however, that the cause of the so-called cystitis is not discovered, for the fistulous tract is not easily demonstrated and the condition is so rare that it may not be considered at the time a differential diagnosis is being made. For this reason, it is apropos occasionally to review the subject and report a series of cases.

TABLE 1—*Age and Sex*

Age, Yr.	No of Cases
0 to 9	1 (9 mo)
10 to 19	2
20 to 29	2
30 to 39	2
40 to 49	2
50 to 59	12
60 to 69	6
70 to 79	4
Male	22
Female	9

TABLE 2—*Etiology*

	Cases	
	No	%
Inflammatory conditions		
Diverticulitis of bowel	15	50
Appendical or pelvic abscess	2	7
Terminal ileitis	1	3
Congenital		
Failure of closure of urorectal septum	1	3
Diverticulosis of colon (see under inflammatory conditions)		
New growths		
Intestinal neoplasms	7	25
Vesical neoplasms	3	9
Trauma		
External trauma	1	3
Operative trauma Roentgen ray and radium } None in this series		
Unknown causation	4	

The term intestinovesical is used because the primary cause of the fistula is more frequently found in the bowel, and it extends from there into the bladder. This term is preferable to enterovesical, for the latter has a mixed Greek and Latin derivation and the prefix "entero" is usually used to identify the small, rather than the large, bowel, whereas "intestino" signifies either.

Communications between the bowel and the bladder are by no means of recent discovery. The first case found in the literature occurred in the second century. Recent medical literature contains the report of several series of cases. Pascal[1] in 1900 collected 292 cases; since that time Kellogg[2] summarized 592; Higgins[3]

From the Departments of Urology and Proctology, College of Medical Evangelists.

Read before the Section on Urology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

[1] Pascal, A.: Des fistules vesico-intestinales acquises chez l'homme et la femme, Thesis, Paris, No. 178, 1900.

[2] Kellogg, W. A.: Vesico-Intestinal Fistula, Am. J. Surg. **41:** 1[illegible]-186 (July) 1938.

[3] Higgins, C. C.: Vesico-Intestinal Fistula, J. Urol. **36:** 694-7[illegible] (Dec.) 1936.

and Peters[4] reported 40 and 21 respectively and summarized previously reported series. Pemberton[5] described 4 cases of vesicoappendical fistula, and Barnes and Hill[6] reported a series and emphasized the importance of making a correct diagnosis.

The cases reported in this communication include the 14 previously recorded by us and 17 additional ones. Incidence is about 1 in 600 patients with urologic disease. The condition is about twice as common in males as in females (table 1) and is most frequent in the sixth and seventh decades.

The commonest cause of intestinovesical fistula is diverticulitis of the bowel, and it accounts for 50 per cent of our series (table 2). An infected diverticulum situated near the bladder becomes abscessed, breaks into the bladder and produces a fistulous tract between the two cavities. Carcinoma of the rectosigmoid was encountered in 25 per cent of our cases; causes are enumerated in table 2.

The importance of making an accurate diagnosis of intestinovesical fistula is emphasized, for the condition may be easily overlooked and many patients suffer from severe intractable cystitis for months before the cause is discovered. If a careful history reveals that the patient passes gas from the bladder, the diagnosis is almost certain. Seldom is this information volunteered, and the interrogator should ask the patient specifically whether he passes gas from the bladder at the end of voiding. An affirmative answer indicates to the physician that he is almost certainly dealing with a patient who has an intestinovesical fistula. Ninety per cent of those in our series presented this symptom (table 3). The majority had frequency and burning on urination as well; however, this symptom was not so constant as pneumaturia.

TABLE 3.—*Symptoms*

	Cases	
	No.	%
Pneumaturia	27	90
Frequency and burning	21	70
Feces in urine	7	23
Fever	6	20
Suprapubic pain	5	16
Pain in rectum	3	10
Urine in stool	3	10

The most constant cystoscopic findings is an area of acute inflammation and edema in the fundus of the bladder. This is usually situated 2 or 3 cm. above the trigone; there is no edema and little inflammation elsewhere in the bladder. Occasionally the orifice of the fistula can be identified in the center of the edematous area, but it is usually obscured by the edema. When the fistula is of long standing and the acute phase has entirely disappeared, there is no edema and the fistulous orifice can be identified in a chronically inflamed bladder mucosa. There are several other diagnostic procedures which may be employed (table 4); however, none of them are reliable. Occasionally, a radiopaque solution injected into the bladder extends through the fistula and enters the colon; this occurred in only 3 out of 15 cases in which cystograms were taken. During proctoscopic examination, the appearance in the bowel of methylthionine chloride injected into the bladder or its presence in the bladder after injection into the rectum is such an irregular finding that these diagnostic methods are seldom of value. The roentgenologic finding of diverticulosis of the colon or the proctoscopic discovery of multiple diverticular orifices in the bowel, of a neoplasm in the rectosigmoid or of a localized area of edema of the intestinal mucosa is of some aid in arriving at a diagnosis. Carcinoma situated in the lower 10 inches (25 cm.) of the large bowel is more accurately diagnosed by proctoscopic examination than by barium enema, for frequently only the larger neoplasms are demonstrated by a filling defect in the roentgenogram.

TABLE 4.—*Diagnosis*

	Cases	
Examination	No.	%
Cystoscopy (26 cases)		
Area of edema in fundus	21	81
Fistulous opening visualized	6	23
Cystogram (15 cases)		
Fistula demonstrated	3	20
Fistula not demonstrated	12	80
Barium enema (17 cases)		
Fistula demonstrated	1	6
Fistula not demonstrated	16	94
Dye into bladder (6 cases)		
Fistula demonstrated	1	17
Fistula not demonstrated	5	83
Dye into rectum (4 cases)		
Fistula demonstrated	1	25
Fistula not demonstrated	3	75

The treatment of intestinovesical fistula is a separate problem in each individual case. If the patient's general condition is good and the fistula is a result of diverticulitis, a one stage repair is usually successful; if excessive inflammatory reaction and induration are present, a two stage operation is indicated. Of the 9 patients in this series on whom one stage repair was performed, 4 either suffered a recurrence or presented a second fistulous tract, which had not been recognized at the time of operation (table 5). Two of these underwent a subsequent two stage intervention. When it is difficult to complete the repair at the first operation, either a preliminary colostomy is done and the fistulous tract obliterated at the second operation or the two procedures are performed at the same sitting and the colostomy left open until the inflammatory induration has subsided and the bladder and bowel have entirely healed.

TABLE 5.—*Treatment and Results*

	No. of Cases	
One stage repair of fistula	9	
Recurrence of fistula		4
Two stage repair (includes 2 reoperations from one stage repair)		
Colostomy either before or at time of repair	6	
Recurrence of fistula (3 still have colostomy)		0
Palliative surgical treatment	5	
No treatment		
Refused	7	
Condition too poor	3	
Probable spontaneous recovery	3	

---

[4] Peters, H. Jr.: Vesico-Intestinal Fistulas, Review of Literature, Including Twenty-One Cases of the University Hospital, Internat. Abstr. Surg. 69:582-588, 1939; in Surg., Gynec. & Obst., December 1939.

[5] Pemberton, J. de J.; Pool, T. L., and Miller, J. M.: Vesico-Appendiceal Fistulas, J. Urol. 44:274-278 (Sept.) 1940.

[6] Barnes, R. W., and Hill, M. R.: Intestino-Vesical Fistula, California & West. Med. 56:350-354 (June) 1942.

static loading, although their response may not be the same under dynamic loading conditions. If a compression load of 1,000 pounds is necessary to break the tibia, for example, the protective material used must undergo deformation under a lesser static load in order to be effective.

The body does not react as a rigid mass when subjected to impact force but behaves as an articulated system containing such shock absorbing materials as intervertebral disks, which serve to absorb the energy of impacts. Only a small part of the energy from a blow on the heels, for example, may be transmitted to the base of the skull.

In aviation the second protective principle was utilized by Bierman, Wilder and Hellems,[26] who, using undrawn nylon and covering wider and less vulnerable areas of the body in a body harness designed ultimately to protect the aviator, were able to reduce to about one-fifth the impact force that otherwise would reach the body. This nylon material stretches without recoil under draw loads well under the minimal force required to produce significant tissue injury.

Intensive studies to determine the limit of trauma to vulnerable parts of the body, the employment of protective material to absorb part of the energy of impact forces, the further elimination by "streamlined" construction of sharp corners and edges and even the incorporation of energy absorbing materials in compartment and cockpit construction give the greatest promise of reducing the high injury and mortality rates attending crashes arising from all types of mechanical locomotion. Whether, for example, safety belts will be worn in automobiles depends on the character of American temperament. Their protective value, however, is certain.

PREVENTION OF ACCIDENTS

In aviation, as in medicine, remedies are at best expedients; the principal objective always will be preventive measures by elimination of injurious factors. Perhaps the most recent achievement in aviation medicine is the fostering of the realization that the effectiveness of the machine depends on the degree to which it is designed to take advantage of the capabilities of man. Human factors have come to play a significant role in aircraft design; the expression "physiologic cockpit" (DuBois) is generally accepted. The doctors of medicine, the doctors of philosophy and other aeromedical personnel are beginning to plan their investigations with engineers at the drawing board and test their findings in experimental aircraft.

As the knowledge of the human structure, physiology and psychology is increased we shall be able to describe man adequately and list his specifications in such a way that training methods and engineering design will permit maximal exploitation of his abilities. To paraphrase a succinct statement by Lieut. Comdr. M. C. Shelesnyak, H(S), U.S.N.R., the problems of yesterday were "fitting the man into the plane"; the solution to today's problem, that of insuring the maximal effectiveness of pilot performance with the maximal degree of safety, lies in "fitting the plane around the man."

---

[26] Bierman, H. R.; Wilder, R. M., Jr., and Hellems, H. K.: The Principles of Protection of the Human Body as Applied in a Restraining Harness for Aircraft Pilots, based on Project X-630, Report No. 6, Naval Medical Research Institute.

INTESTINOVESICAL FISTULA

ROGER W. BARNES, M.D.
and
MALCOLM R. HILL, M.D.
Los Angeles

The presenting symptoms of intestinovesical fistula are nearly always those of irritation of the bladder. The urologist is therefore consulted in order to assure a correct diagnosis. It happens too often, however, that the cause of the so-called cystitis is not discovered, for the fistulous tract is not easily demonstrated and the condition is so rare that it may not be considered at the time a differential diagnosis is being made. For this reason, it is apropos occasionally to review the subject and report a series of cases.

TABLE 1.—*Age and Sex*

Age, Yr.	No. of Cases
0 to 9	1 (9 mo.)
10 to 19	2
20 to 29	2
30 to 39	2
40 to 49	2
50 to 59	12
60t o 69	6
70 to 79	4
Male	22
Female	9

TABLE 2.—*Etiology*

	Cases	
	No.	%
Inflammatory conditions		
Diverticulitis of bowel	15	50
Appendical or pelvic abscess	2	7
Terminal ileitis	1	3
Congenital		
Failure of closure of urorectal septum	1	3
Diverticulosis of colon (see under inflammatory conditions)		
New growths		
Intestinal neoplasms	7	25
Vesical neoplasms	3	9
Trauma		
External trauma	1	3
Operative trauma	None in this series	
Roentgen ray and radium		
Unknown causation	4	

The term intestinovesical is used because the primary cause of the fistula is more frequently found in the bowel, and it extends from there into the bladder. This term is preferable to enterovesical, for the latter has a mixed Greek and Latin derivation and the prefix "entero" is usually used to identify the small, rather than the large, bowel, whereas "intestino" signifies either.

Communications between the bowel and the bladder are by no means of recent discovery. The first case found in the literature occurred in the second century. Recent medical literature contains the report of several series of cases. Pascal[1] in 1900 collected 292 cases; since that time Kellogg[2] summarized 592; Higgins[3]

From the Departments of Urology and Proctology, College of Medical *Evangelists.*

Read before the Section on Urology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

[1] Pascal, A.: Des fistules vésico-intestinales acquises chez l'homme et la femme, Thesis, Paris, No. 178, 1900.

[2] Kellogg, W. A.: Vesico-Intestinal Fistula, Am. J. Surg. 41: 135-186 (July) 1938.

[3] Higgins, C. C.: Vesico-Intestinal Fistula, J. Urol. 36: 694-706 (Dec.) 1936.

and Peters[4] reported 40 and 21 respectively and summarized previously reported series. Pemberton[5] described 4 cases of vesicoappendical fistula, and Barnes and Hill[6] reported a series and emphasized the importance of making a correct diagnosis.

The cases reported in this communication include the 14 previously recorded by us and 17 additional ones. Incidence is about 1 in 600 patients with urologic disease. The condition is about twice as common in males as in females (table 1) and is most frequent in the sixth and seventh decades.

The commonest cause of intestinovesical fistula is diverticulitis of the bowel, and it accounts for 50 per cent of our series (table 2). An infected diverticulum situated near the bladder becomes abscessed, breaks into the bladder and produces a fistulous tract between the two cavities. Carcinoma of the rectosigmoid was encountered in 25 per cent of our cases; causes are enumerated in table 2.

The importance of making an accurate diagnosis of intestinovesical fistula is emphasized, for the condition may be easily overlooked and many patients suffer from severe intractable cystitis for months before the cause is discovered. If a careful history reveals that the patient passes gas from the bladder, the diagnosis is almost certain. Seldom is this information volunteered, and the interrogator should ask the patient specifically whether he passes gas from the bladder at the end of voiding. An affirmative answer indicates to the physician that he is almost certainly dealing with a patient who has an intestinovesical fistula. Ninety per cent of those in our series presented this symptom (table 3). The majority had frequency and burning on urination as well; however, this symptom was not so constant as pneumaturia.

Table 3.—*Symptoms*

	Cases	
	No.	%
Pneumaturia	27	90
Frequency and burning	21	70
Feces in urine	7	23
Fever	6	20
Suprapubic pain	5	16
Pain in rectum	3	10
Urine in stool	3	10

The most constant cystoscopic findings is an area of acute inflammation and edema in the fundus of the bladder. This is usually situated 2 or 3 cm. above the trigone; there is no edema and little inflammation elsewhere in the bladder. Occasionally the orifice of the fistula can be identified in the center of the edematous area, but it is usually obscured by the edema. When the fistula is of long standing and the acute phase has entirely disappeared, there is no edema and the fistulous orifice can be identified in a chronically inflamed bladder mucosa. There are several other diagnostic procedures which may be employed (table 4); however, none of them are reliable. Occasionally, a radiopaque solution injected into the bladder extends through the fistula and enters the colon; this occurred in only 3 out of 15 cases in which cystograms were taken. During proctoscopic examination, the appearance in the bowel of methylthionine chloride injected into the bladder or its presence in the bladder after injection into the rectum is such an irregular finding that these diagnostic methods are seldom of value. The roentgenologic finding of diverticulosis of the colon or the proctoscopic discovery of multiple diverticular orifices in the bowel, of a neoplasm in the rectosigmoid or of a localized area of edema of the intestinal mucosa is of some aid in arriving at a diagnosis. Carcinoma situated in the lower 10 inches (25 cm.) of the large bowel is more accurately diagnosed by proctoscopic examination than by barium enema, for frequently only the larger neoplasms are demonstrated by a filling defect in the roentgenogram.

Table 4.—*Diagnosis*

Examination	Cases	
	No.	%
Cystoscopy (26 cases)		
Area of edema in fundus	21	81
Fistulous opening visualized	6	23
Cystogram (15 cases)		
Fistula demonstrated	3	20
Fistula not demonstrated	12	80
Barium enema (17 cases)		
Fistula demonstrated	1	6
Fistula not demonstrated	16	94
Dye into bladder (6 cases)		
Fistula demonstrated	1	17
Fistula not demonstrated	5	83
Dye into rectum (4 cases)		
Fistula demonstrated	1	25
Fistula not demonstrated	3	75

The treatment of intestinovesical fistula is a separate problem in each individual case. If the patient's general condition is good and the fistula is a result of diverticulitis, a one stage repair is usually successful; if excessive inflammatory reaction and induration are present, a two stage operation is indicated. Of the 9 patients in this series on whom one stage repair was performed, 4 either suffered a recurrence or presented a second fistulous tract, which had not been recognized at the time of operation (table 5). Two of these underwent a subsequent two stage intervention. When it is difficult to complete the repair at the first operation, either a preliminary colostomy is done and the fistulous tract obliterated at the second operation or the two procedures are performed at the same sitting and the colostomy left open until the inflammatory induration has subsided and the bladder and bowel have entirely healed.

Table 5.—*Treatment and Results*

	No. of Cases	
One stage repair of fistula	9	
Recurrence of fistula		4
Two stage repair (includes 2 reoperations from one stage repair)		
Colostomy either before or at time of repair	6	
Recurrence of fistula (3 still have colostomy)		0
Palliative surgical treatment	5	
No treatment		
Refused	7	
Condition too poor	3	
Probable spontaneous recovery	3	

---

[4] Peters, H. Jr.: Vesico-Intestinal Fistulas, Review of Literature, Including Twenty-One Cases of the University Hospital, Internat. Abstr. Surg. **69**: 582-588, 1939; in Surg., Gynec. & Obst., December 1939.

[5] Pemberton, J. de J.; Pool, T. L., and Miller, J. M.: Vesico-Appendiceal Fistulas, J. Urol. **44**: 274-278 (Sept.) 1940.

[6] Barnes, R. W., and Hill, M. R.: Intestino-Vesical Fistula, California & West. Med. **56**: 350-354 (June) 1942.

Most patients who present carcinoma of the lower part of the bowel which has caused formation of an intestinovesical fistula present too poor risks for radical operation, or the neoplasm is so extensive that it is inoperable and therefore only palliative colostomy is indicated. A notable exception is a case in this series, that of M. C., a white man aged 49, first seen in October 1935. A carcinoma of the rectosigmoid had necrosed through the bladder, creating a fistula. A one stage abdominoperineal resection of the rectum was done, a portion of the posterior part of the bladder wall removed and the left ureter transplanted into the fundus of the bladder. The patient had a somewhat stormy convalescence but is still living and shows no evidence of recurrence of the tumor nearly eleven years after operation.

It is often necessary in the treatment of intestinovesical fistula for colostomy to be maintained for several years and sometimes permanently. When colostomy is properly performed and the patient is taught how to care for it adequately, he is able to live a normal life. There is no odor or other evidence of his condition.

SUMMARY

Intestinovesical fistula, although not common, occurs often enough to require the physician to keep it in mind when making a differential diagnosis of the cause of cystitis. The two characteristic, almost diagnostic, criteria which lead to the discovery of the condition are pneumaturia and the cystoscopic appearance of a localized area of acute inflammation and edema in the fundus of the bladder. Other diagnostic procedures are useful when findings are indicative of the condition but are usually of little value. The curative surgical treatment of choice is two stage repair of the fistula by means of preliminary colostomy or colostomy at the time of repair. A summary of 31 cases is given. There were no recurrences in 6 cases in which the patients were treated by two stage repair.

1216 Wilshire Boulevard.

ABSTRACT OF DISCUSSION

Dr. John H. Morrissey, New York: In his series and tabulations, 1 in 600 cases of urologic disease is by no means a small incidence, the gravity of the condition being considered. The original contribution to this subject, that of Harrison Cripps, of London, in 1868, entitled "The Passage of Air and Feces from the Human Bladder," laid down basic principles of causation and diagnosis that are fundamentally unchanged today. Then, as today, diverticulitis of the colon was noted as the principal cause and, secondly, rectosigmoidal carcinoma. The passage of air—pneumaturia—or fecal matter through the urethra, associated with intractable cystitis, was the presenting symptom that brought the patient to the surgeon. In 1931, at the Detroit meeting of this section, I reported a series of 47 cases together with Dr. J. M. Lynch, of New York. It was my opinion then, and still is, that a two stage operation is the only procedure for the treatment of the condition—a preliminary colostomy, with adequate period of drainage and subsequent excision of the fistulous tract—regardless of the fact as to whether the bladder opening may have closed in the interval. If not excised, it will inevitably recur. Dr. Barnes's results would indicate that this is still the preferable method of surgical treatment. Another observation worthy of attention is the increased incidence of these fistulas in males. Cripps called attention to a similar disproportion of the sexes in his series of 38 cases, in only 6 of which the patients were women. This leads me to conclude that this complication, which, after all, is basically inflammatory in character, is in a measure connected with or associated with some anatomic structure peculiar to males. Similar conclusions have been reached by Sutton, Rankin and Judd, at Rochester, and Leon Herman and Baird Stuart, in Philadelphia. In my opinion, these structures are the prostate and, particularly, the postprostatic space. It is through this last area that the fistulous tract generally extends. Therefore, we should especially have this in mind in a study of unexplained cystitis in the male patient. The use of sulfonamide drugs and penicillin has changed the entire picture not *only in the early treatment of these fistulas but in their incidence.* The diagnosis of diverticulitis is today most frequently made and verified by roentgenologic examination as a clinical entity.

Dr. Robert A. Scarborough, San Francisco: The essayists have clearly demonstrated the difficulties of establishing a diagnosis of intestinovesical fistula. Information relative to the occurrence of pneumaturia is seldom volunteered by the patient, and the presence of feces in the urine was a symptom in less than 25 per cent of their cases. Frequency and burning would appear to be the dominant complaints. The difficulties of demonstrating the presence of a fistula are shown by the fact that this was possible in only 6 cases by cystoscopy, in 3 by cystogram, in 1 by barium enema, in 1 by instillation of dye into the bladder and in 1 by instillation of dye into the rectum. The authors have found that 50 per cent of their cases originated with diverticulitis of the bowel. This is consistent with the reports of Kellogg, of Higgins and of Ewell and Jackson. Their description of the rupture into the bladder of an abscess secondary to inflammation of a diverticulum suggests a fairly acute process. However, Mayo and Miller have called attention to the fact that, as a rule, onset of the development of a fistula is gradual, with burning and frequency finally developing after repeated attacks of moderate pain in the left lower quadrant. In several of their patients, symptoms referable to the bladder developed without any antecedent abdominal or intestinal symptoms. *Pelvic inflammatory disease and surgical trauma* are major causative agents which are notably lacking in the series of cases reported today. An unusual instance of traumatic origin recently encountered by Dr. James Dillon, professor of urology at Stanford University School of Medicine, was that resulting from the treatment of an inguinal hernia by injection. This resulted in an ileovesical fistula, due to the subsequent necrosis. The mortality rate from surgical intervention is usually high, with peritonitis the commonest cause of death. The authors, however, have had no deaths in 15 cases of fistula surgically corrected. In 9 cases the authors found a single stage operation feasible. However, there was a recurrence of fistula in 4 of these. In the 6 cases with colostomy before or at the time of repair, there have been no recurrences. This experience supports my own conviction that preliminary double-barreled colostomy, so constructed as to divert completely the fecal stream, is always advisable. This procedure simplifies the problem of dissection and repair by diminishing the local inflammatory reaction, decreases the risk of peritonitis and minimizes the possibility of recurrence of the fistula.

Dr. Grayson L. Carroll, St. Louis: I should like to call your attention to the method my associates and I used successfully in 2 cases of vesicointestinal fistula. Both were caused by the rupture of a diverticulitis into the bladder and were small. One caused gas to be passed through the urethra and the other gas plus feces. Methylthionine chloride injected in the rectum appeared *in the urine. An electrode was passed by* means of the cystoscope into the fistulous tract and the mucous membrane lining fulgurated away. The urethral catheter was retained in the bladder for a week. In each of these cases, we anticipated a major operation and were well pleased to have them close in this simple manner. Succinylsulfathiazole, 1 Gm. daily, and sulfathiazole, 15 grains (0.9 Gm.) every four hours, were administered during the period of hospitalization.

Dr. Roger W. Barnes, Los Angeles: We have not used fulguration of the vesical orifice of the fistula in any of these cases. We tried it a few times in vesical-vaginal fistula but without much success. It is interesting to hear Dr. Carroll's results in using this simple treatment.

ANATOMIC CONSIDERATIONS OF GASTRIC NEURECTOMY

WILLIAM F. BRADLEY, M.D.
Fellow in Medicine, Mayo Foundation
JOHN T. SMALL, M.D.
JAMES W. WILSON, M.D.
Fellows in Surgery, Mayo Foundation
and
WALTMAN WALTERS, M.D.
Rochester, Minn.

At the February meeting of the Central Surgical Association, one of us (Walters) discussed with Dr. Edwin Miller of Chicago the problem of division of the vagus nerves in treatment of gastric and duodenal ulcers. Dr. Miller said that from dissection of approximately thirty vagus nerves he had been astonished to find great variation of distribution of these nerves in the vicinity of the diaphragm. He expressed the belief that the patterns of distribution should be assembled in groups with the idea of determining whether or not all the gastric branches of the vagus nerves or the gastric nerves could be removed successfully by transabdominal approach. He suggested that we at the Mayo Clinic might collaborate in such a study. The possibility of carrying out the study was discussed with Dr. J. W. Kernohan of the Section on Pathologic Anatomy and the work was begun with a survey of the literature, only a little of which will be recounted here, and the dissection of vagus nerves in more than a hundred cases at postmortem examination.

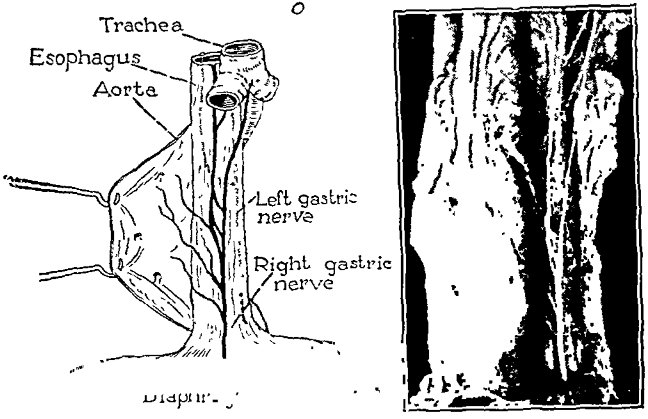


Fig. 1 *a* and *b*.—Formation of right gastric nerves from branches of the pulmonary plexus behind the trachea and sympathetic branches posteriorly. Example of group 1.

Denervation of the stomach is not a new concept in the treatment of peptic ulcer.[1] and an extensive and confusing literature has appeared since Brodie's[2] first report in 1814. A review of the literature revealed that in many instances the early and late effects of denervation have been confused,[3] and the results of section of the gastric nerves[4] of man have been compared indiscriminately with those obtained on lower animals.[5] The extent of the operation has varied in the hands of different workers, and the fact must not be overlooked that many workers have employed it in the experimental production of peptic ulcer.[5a] That there is no agreement on even the morphology of the structures of these nerves, let alone their function, is reflected in recent reports in which one author[6] concluded that the vagus nerve is composed of nothing but sympathetic fibers, whereas two other investigators[7] denied the presence of sympathetic fibers entirely. In that the present study is morphologic rather than physiologic we are concerned chiefly with clarification of the distribution of the gastric nerves[8] immediately

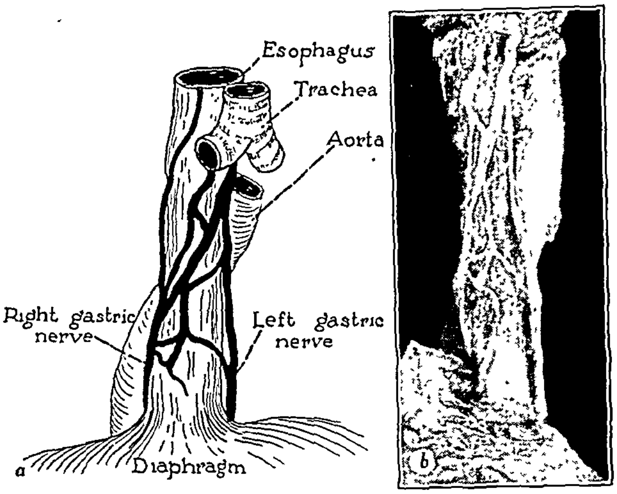


Fig. 2 *a* and *b*.—Formation of gastric nerves from the esophageal plexus (group 2).

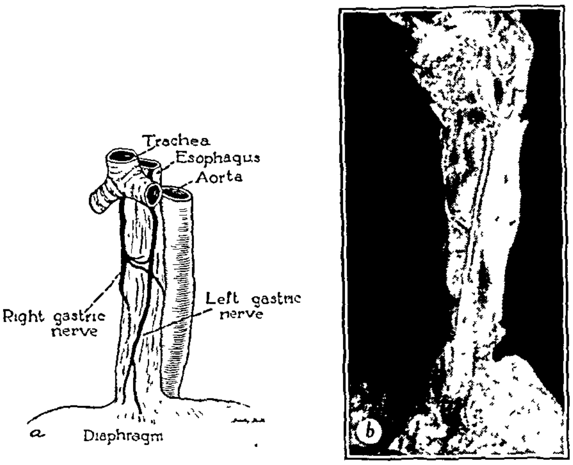


Fig. 3 *a* and *b*.—Formation of gastric nerves, demonstrating the absence of intercommunicating branches between the esophageal hiatus and 6 cm. above the diaphragm (group 3).

From the Division of Surgery (Dr. Walters), the Mayo Clinic.

Work done in the Section on Pathologic Anatomy under the direction of Dr. J. W. Kernohan.

[1] Latarjet, A.: *Resection des nerfs de l'estomac: Technique opératoire; Résultats cliniques*, Bull. Acad. de méd., Paris **87**: 681-691, 1922; Note préliminaire sur l'innervation et l'énervation de l'estomac, Lyon méd. **130**: 166-167, 1921.

[2] Brodie, B., cited by Hartzell, J. B.: The Effect of Section of the Vagus Nerves on Gastric Acidity, Am. J. Physiol. **91**: 161-171 (Dec.) 1929.

[3] Dragstedt, L. R., and Schafer, P. W.: Gastroduodenal Ulcer, Surgery **17**: 742-749 (May) 1945. Dragstedt, L. R.: Vagotomy for Gastroduodenal Ulcer, Ann. Surg. **122**: 973-989 (Dec.) 1945. Thornton, T. F., Jr.; Storer, E. H., and Dragstedt, L. R.: Supradiaphragmatic Section of the Vagus Nerves: Effect on Gastric Secretion and Motility in Patients with Peptic Ulcer, J. A. M. A. **130**: 764-769 (March 23) 1946.

[4] According to Cunningham's textbook on anatomy (Waterston, David: Digestive System, in Cunningham, D. J.: Text-Book of Anatomy, ed. 7, edited by J. C. Brash and E. B. Jamieson, New York, Oxford University Press, 1937, p. 567) the vagus nerves which pass from the esophageal plexus downward on the front and back of the esophagus through the opening in the diaphragm are termed anterior and posterior gastric nerves, respectively. In our investigations the right nerve was not always posterior or the left nerve anterior to the esophagus as it passed through the esophageal hiatus and we proposed the term right gastric nerve and left gastric nerve. As any surgical procedure which would delete a section of a nerve would be known as neurectomy, when the gastric nerves are resected the procedure would be known as "gastric neurectomy."

(Footnotes 5, 6, 7 and 8 on next page)

Most patients who present carcinoma of the lower part of the bowel which has caused formation of an intestinovesical fistula present too poor risks for radical operation, or the neoplasm is so extensive that it is inoperable and therefore only palliative colostomy is indicated. A notable exception is a case in this series, that of M. C., a white man aged 49, first seen in October 1935. A carcinoma of the rectosigmoid had necrosed through the bladder, creating a fistula. A one stage abdominoperineal resection of the rectum was done, a portion of the posterior part of the bladder wall removed and the left ureter transplanted into the fundus of the bladder. The patient had a somewhat stor convalescence but is still living and shows no evi of recurrence of the tumor nearly eleven yea operation.

It is often necessary in the treatment vesical fistula for colostomy to be maint years and sometimes permanently. is properly performed and the pat care for it adequately, he is ab There is no odor or other e

SU

Intestinovesical fist often enough to r mind when mak of cystitis. T criteria wh pneuma ized fu

In addition to the 100 adults already mentioned in whom the anatomy of the gastric nerves was studied, we examined 11 children post mortem. Our observations in these 11 cases are not included in our results because of the difficulty in identifying the smaller twigs ranches of the nerves. As far as we could deter- owever, the distribution of the gastric nerves en is the same as in adults.

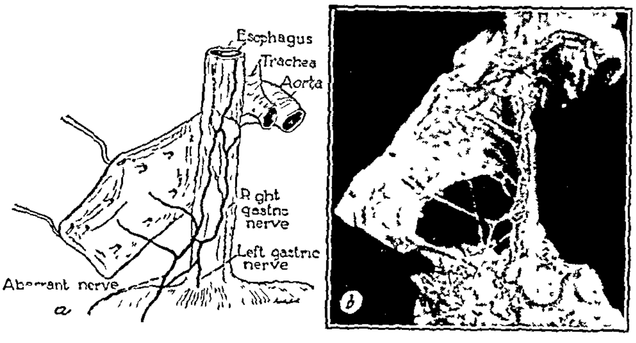


Fig. 5 *a* and *b*.—Another example of distribution of nerves (group 4).

Our observations were made on 56 men and 44 women.

with or associated with some males. Similar conclusion Rankin and Judd, at Roc Stuart, in Philadelphia the prostate and, p through this last Therefore, we of unexplai amide dr only i Th

stric nerves arose from the level of the bifurca- t and left nerves coursed terminated on the stom- ertain variations that led four groups.

TS

astric nerves took origin In 85 of our cases this ll of the esophagus behind ea and behind the main this occurred at the level esophagus. As the gas- many intercommunicating ween the right and the left were added to the gastric oursed anteriorly and inferi- umn and the aorta. Com- sometimes seen to enter the gus and either lose their he surface of the esophagus ion. By the time the nerve eached the esophageal hiatus

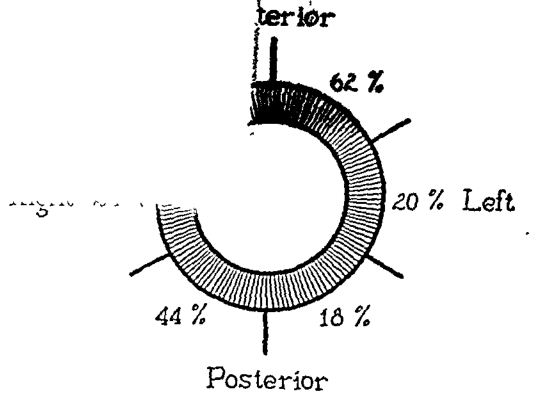


Fig. 6.—Relative position of the right and left gastric nerves about the esophagus at the level of the esophageal hiatus.

two relatively large trunks were formed. These trunks passed through the esophageal hiatus, below which their course was remarkably constant.

The 92 cases constitute three of our groups. In the first group all the branches between the gastric nerves and from more remote regions joined in common trunks, one on the right and one on the left side of the esophagus, somewhere between the esophageal hiatus and

---

5. *Ochsner, Alton, and DeBakey, Michael: Surgical Considerations of* Achalasia: Review of Literature and Report of 3 Cases, Arch. Surg. **41:** 1146-1183 (Nov.) 1940. Ferguson, J. H.: Effects of Vagotomy on the Gastric Functions of Monkeys, Surg. Gynec. & Obst. **62:** 689-700 (April) 1936. Knight, G. C., and Adamson, W. A. D.: Achalasia of the Cardia, Proc. Roy. Soc. Med. **28:** 891-897 (May) 1935. Watanabe, Tamotsu: Zur pathologischen Physiologie der motorischen Funktion des Magens: Einfluss von Lahmung und Reizung einzelner und mehrerer Komponenten des vegetativen Nervensystems auf Tonus und Peristaltik, Virchows Arch. f. path. Anat. **251:** 494-532, 1924. McCrea, E. D.: The Nerves of the Stomach and Their Relation to Surgery, Brit. J. Surg. **13:** 621-648

(Footnote 5 continued in next column)

(April) 1926. Koennecke, Walter, and Meyer, Herm: Röntgenuntersuchungen *über den Einfluss von Vagus und Sympathicus auf Magen* und Darm. Mitt. a. d. Grenzgeb. d. Med. u. Chir. **35:** 297-323, 1922. Thornton, Storer and *Dragstedt.*[3]

5a. Beaver, M. G., and Mann., F. C.: The Production of Peptic Ulcer After Section of the Gastric Nerve, Ann. Surg. **94:** 1116-1118 (Dec.) 1931. Beazell, J. M., and Ivy, A. C.: Chronic Gastric Ulcer Following Bilateral Vagotomy in the Rabbit and the Dog, Arch. Path. **22:** 213-219 (Aug.) 1936. Greggio, Ettore: Des ulcères gastro-duodénaux, Arch. de méd. expér. et d'anat. path. **27:** 533-590, 1917. Durante, Luigi: The Trophic Element in the Origin of Gastric Ulcer, Surg., Gynec. & Obst. **22:** 399-406 (April) 1916. Lium, Rolf: Peptic Ulcer and Diarrhea Following the Removal of the Prevertebral Ganglia in Dogs: The Antispasmodic Effects of Magnesium Sulfate, Pentobarbital and Atropine Sulfate, *Surgery* **9:** *538-553 (April) 1941.*

6. Kiss, F.: The Relationship Between Vagus and Sympathetic in the Vertebrates, *J. Anat.* **66:** *153-156 (Oct.) 1931.*

7. McSwiney, B. A., and Spurrell, W. R.: The Gastric *Fibres of the* Vagus Nerve, J. Physiol. **77:** 447-458 (March 15) 1933.

8. Durward, A.: Peripheral Nervous System, in Cunningham, D. J.: Text-Book of Anatomy, ed. 8, edited by J. C. Brash and E. B. Jamieson. New York, Oxford University Press, 1943, p. 1099.

9. McCrea, E. D.: The Abdominal Distribution of the Vagus, J. Anat **59:** 18-40 (Oct.) 1924.

6 cm. above the diaphragm (fig. 1 *a* and *b*). There were 64 such cases.

In the second group there were so many intercommunicating branches between the main trunks of the gastric nerves that a plexus was formed over a major portion of the surface of the esophagus. The branches ultimately united and formed two main trunks at the esophageal hiatus (fig. 2 *a* and *b*). There were 7 such cases.

The third group was characterized by the long discrete trunks without any additions to their fibers or communicating branches for a distance of 6 cm. above the diaphragm (fig. 3 *a* and *b*). There were 21 cases of this sort.

The fourth group was made up of the remaining 8 cases. The nerves did not have a consistent or uniform course or pattern. In some instances well formed trunks were present, but somewhere near the diaphragm a well defined branch would leave the main trunk and course laterally in the thorax and lose its identity before leaving the thorax (fig. 4 *a* and *b*). In other cases the numerous branches of the esophageal plexus failed to form into common trunks on one or both sides of the esophagus (fig. 5 *a* and *b*). In such a case the multiple small fibers followed their course along the esophagus; some went through the esophageal hiatus, some ran laterally in the thorax. In such cases as these we were never quite certain of the distribution of every fiber of the right and left gastric nerves. Hence in cases of this type it might become difficult for the surgeon to section all the gastric nerves.

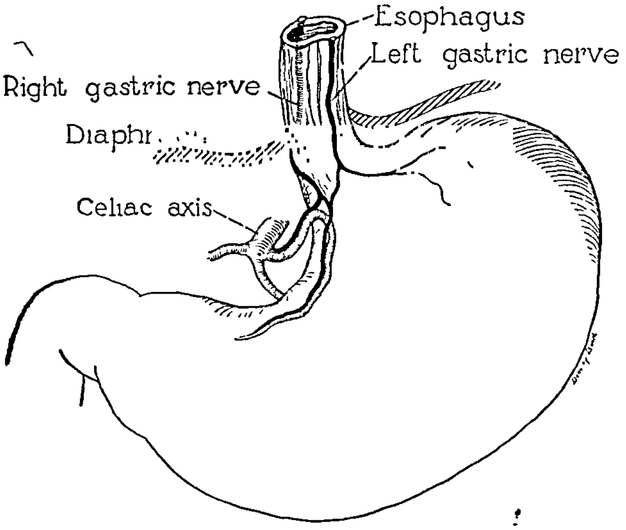


Fig. 7.—General distribution of the right and left gastric nerves below the diaphragm.

As the trunks passed through the esophageal hiatus we noted the relative position of the right and the left trunks about the esophagus (fig. 6).

Below the esophageal hiatus the course was remarkably constant (fig. 7). The right gastric nerve, the larger in 54 cases, coursed posteriorly and to the left. After about 3 to 5 cm. this right gastric nerve divided into numerous branches. One of these branches followed the lesser curvature of the stomach as far as the incisura, and another large branch followed the left gastric artery. Our routine dissections did not carry us beyond the division of the right gastric nerve into these branches.

The left nerve, on the other hand, had a short course in the abdomen. As the left gastric nerve came to lie on the anterior surface of the stomach, it almost immediately divided into numerous small branches which lost their identity in the serosa and musculature of the stomach. A branch known as the anterior nerve of the lesser curvature was consistently present behind the anterior leaf of the gastrohepatic omentum. Occasionally a small communicating branch between the right and the left gastric nerves could be identified at the esophageal hiatus.

COMMENT

This work suggests that in slightly more than 90 per cent of cases a transabdominal subdiaphragmatic surgical approach will allow of as nearly a complete division of all the gastric nerves as will a transthoracic approach. In somewhat less than 10 per cent of cases the pattern of the nerves is not uniform. In some cases numerous branches of the esophageal plexus fail to form into common trunks on one or both sides of the esophagus. In such cases the surgeon would encounter difficulty in sectioning all the gastric nerves.

AN ANATOMIC STUDY OF THE VAGUS NERVES

Influence on Choice of Surgical Approach in Patients with Chronic Peptic Ulcer

EDWIN M. MILLER, M.D.
and
CARL B. DAVIS Jr., M.D.
Chicago

The work of Dragstedt and his associates at the University of Chicago has aroused universal interest in the treatment of chronic peptic ulcer by section of the vagus nerves. Even though the elapsed time since their first operation has been only about three and one-half years, the clinical results in their series of approximately 80 cases has clearly demonstrated the value of this procedure.

We have shared the interest of many others in this work, but we were not willing to proceed with this operation before we had investigated the likelihood of anomalous distribution of the vagus nerves along the lower portion of the esophagus, the idea being that unless all the branches are divided the results of the operation might be disappointing.

We have therefore gone into the autopsy room at the Presbyterian Hospital and through the cooperation of the pathologists been permitted to make dissections of the vagus nerves below the level of the pulmonary plexus in a series of 13 fresh bodies. The textbooks of anatomy state that normally these nerves after leaving the pulmonary plexus continue as a plexus about the esophagus, from which they proceed downward as two main trunks for a distance of 4 to 6 inches, the right becoming the posterior and the left the anterior trunk as they pass through the hiatus of the diaphragm and fan out on the walls of the stomach.

From the Department of Surgery, Presbyterian Hospital, and the University of Illinois College of Medicine.

above and below the esophageal hiatus of the diaphragm. Previous investigators have shown that each gastric nerve is composed of fibers from both vagi as well as sympathetic nerves.[9]

MATERIAL STUDIED

Anatomic consideration of the nervous structures from the cardiopulmonary plexus to the stomach revealed great variation in pattern, whereas the nerves are remarkably constant in course and distribution after reaching the stomach. In dissection in more than 100 cases at necropsy we have concentrated, therefore, on the region above the stomach in order to evaluate the thoracic and abdominal approaches to the lower part of the esophagus.

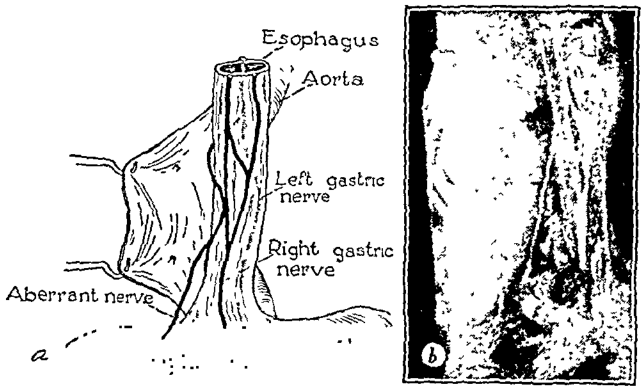


Fig. 4 *a* and *b*.—Right gastric nerve with aberrant nerve coursing laterally into thorax (group 4).

In addition to the 100 adults already mentioned in whom the anatomy of the gastric nerves was studied, we examined 11 children post mortem. Our observations in these 11 cases are not included in our results because of the difficulty in identifying the smaller twigs and branches of the nerves. As far as we could determine, however, the distribution of the gastric nerves in children is the same as in adults.

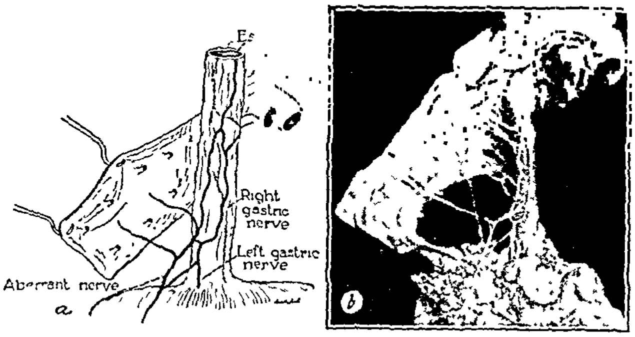


Fig. 5 *a* and *b*.—Another example of distribution of nerves (group 4).

Our observations were made on 56 men and 44 women.

Generally speaking, the gastric nerves arose from the esophageal plexus at about the level of the bifurcation of the trachea. The right and left nerves coursed caudad and usually ultimately terminated on the stomach. There were, however, certain variations that led us to separate our cases into four groups.

RESULTS

In 92 of our cases the gastric nerves took origin from the esophageal plexus. In 85 of our cases this occurred on the anterior wall of the esophagus behind the bifurcation of the trachea and behind the main bronchi. In 7 of our cases this occurred at the level of the lower part of the esophagus. As the gastric nerves coursed caudad many intercommunicating branches were observed between the right and the left trunks. Additional fibers were added to the gastric nerves by small fibers that coursed anteriorly and inferiorly over the vertebral column and the aorta. Communicating branches were sometimes seen to enter the musculature of the esophagus and either lose their identity or reemerge onto the surface of the esophagus at some more caudad position. By the time the nerve trunks and branches had reached the esophageal hiatus two relatively large trunks were formed. These trunks passed through the esophageal hiatus, below which their course was remarkably constant.

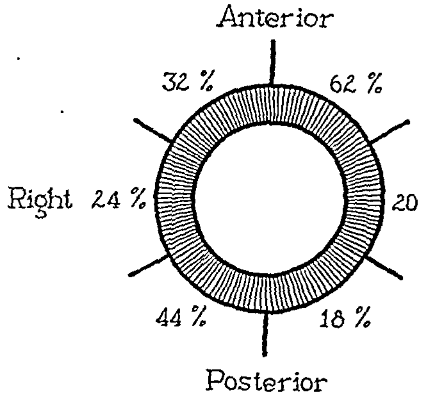


Fig. 6.—Relative position of the right and left gastric nerves about the esophagus at the level of the esophageal hiatus.

The 92 cases constitute three of our groups. In the first group all the branches between the gastric nerves and from more remote regions joined in common trunks, one on the right and one on the left side of the esophagus, somewhere between the esophageal hiatus and

---

5. Ochsner, Alton, and DeBakey, Michael: Surgical Considerations of Achalasia: Review of Literature and Report of 3 Cases, Arch. Surg. **41:** 1146-1183 (Nov.) 1940. Ferguson, J. H.: Effects of Vagotomy on the Gastric Functions of Monkeys, Surg. Gynec. & Obst. **62:** 689-700 (April) 1936. Knight, G. C., and Adamson, W. A. D.: Achalasia of the Cardia, Proc. Roy. Soc. Med. **28:** 891-897 (May) 1935. Watanabe, Tamotsu: Zur pathologischen Physiologie der motorischen Funktion des Magens: Einfluss von Lahmung und Reizung einzelner und mehrerer Komponenten des vegetativen Nervensystems auf Tonus und Peristaltik, Virchows Arch. f. path. Anat. **251:** 494-532, 1924. McCrea, E. D.: The Nerves of the *Stomach and Their Relation to Surgery*, Brit. J. Surg. **13:** 621-648

(Footnote 5 continued in next column)

(April) 1926. Koennecke, Walter, and Meyer, Herm: Röntgenuntersuchungen über den Einfluss von Vagus und Sympathicus auf Magen und Darm. Mitt. a. d. Grenzgeb. d. Med. u. Chir. **35:** 297-323, 1922. *Thornton, Storer and Dragstedt.*[3]

5a. Beaver, M. G., and Mann., F. C.: The Production of Peptic Ulcer *After Section of the* Gastric Nerve, Ann. Surg. **94:** 1116-1118 (Dec.) 1931. Beazell, J. M., and Ivy, A. C.: Chronic Gastric Ulcer Following Bilateral *Vagotomy in the Rabbit and the Dog, Arch. Path.* **22:** *213-219* (Aug.) 1936. Greggio, Ettore: Des ulcères gastro-duodénaux, Arch. de med. expér. et d'anat. path. **27:** 533-590, 1917. Durante, Luigi: The Trophic Element in the Origin of Gastric Ulcer, Surg., Gynec. & Obst. **22:** 399-406 (April) 1916. Lium, Rolf: Peptic Ulcer and Diarrhea Following the Removal of the Prevertebral Ganglia in Dogs: The Antispasmodic Effects of Magnesium Sulfate, Pentobarbital and Atropine Sulfate, Surgery **9:** 538-553 (April) 1941.

6. Kiss, F.: The Relationship Between Vagus and Sympathetic in the Vertebrates, J. Anat. **66:** 153-156 (Oct.) 1931.

7. McSwiney, B. A., and Spurrell, W. R.: *The Gastric Fibres of the* Vagus Nerve, J. Physiol. **77:** 447-458 (March 15) 1933.

8. Durward, A.: Peripheral Nervous System, in Cunningham, D. J.: Text-Book of Anatomy, ed. 8, edited by J. C. Brash and E. B. Jamieson. New York, Oxford University Press, 1943, p. 1099.

9. McCrea, E. D.: The Abdominal Distribution of the Vagus, J. Anat **59:** 18-40 (Oct.) 1924.

6 cm. above the diaphragm (fig. 1 *a* and *b*). There were 64 such cases.

In the second group there were so many intercommunicating branches between the main trunks of the gastric nerves that a plexus was formed over a major portion of the surface of the esophagus. The branches ultimately united and formed two main trunks at the esophageal hiatus (fig. 2 *a* and *b*). There were 7 such cases.

The third group was characterized by the long discrete trunks without any additions to their fibers or communicating branches for a distance of 6 cm. above the diaphragm (fig. 3 *a* and *b*). There were 21 cases of this sort.

The fourth group was made up of the remaining 8 cases. The nerves did not have a consistent or uniform course or pattern. In some instances well formed trunks were present, but somewhere near the diaphragm a well defined branch would leave the main trunk and course laterally in the thorax and lose its identity before leaving the thorax (fig. 4 *a* and *b*). In other cases the numerous branches of the esophageal plexus failed to form into common trunks on one or both sides of the esophagus (fig. 5 *a* and *b*). In such a case the multiple small fibers followed their course along the esophagus; some went through the esophageal hiatus, some ran laterally in the thorax. In such cases as these we were never quite certain of the distribution of every fiber of the right and left gastric nerves. Hence in cases of this type it might become difficult for the surgeon to section all the gastric nerves.

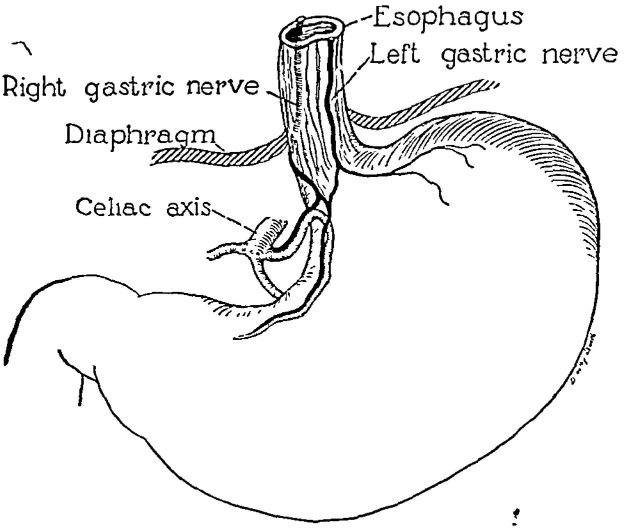


Fig. 7.—General distribution of the right and left gastric nerves below the diaphragm.

As the trunks passed through the esophageal hiatus we noted the relative position of the right and the left trunks about the esophagus (fig. 6).

Below the esophageal hiatus the course was remarkably constant (fig. 7). The right gastric nerve, the larger in 54 cases, coursed posteriorly and to the left. After about 3 to 5 cm. this right gastric nerve divided into numerous branches. One of these branches followed the lesser curvature of the stomach as far as the incisura, and another large branch followed the left gastric artery. Our routine dissections did not carry us beyond the division of the right gastric nerve into these branches.

The left nerve, on the other hand, had a short course in the abdomen. As the left gastric nerve came to lie on the anterior surface of the stomach, it almost immediately divided into numerous small branches which lost their identity in the serosa and musculature of the stomach. A branch known as the anterior nerve of the lesser curvature was consistently present behind the anterior leaf of the gastrohepatic omentum. Occasionally a small communicating branch between the right and the left gastric nerves could be identified at the esophageal hiatus.

COMMENT

This work suggests that in slightly more than 90 per cent of cases a transabdominal subdiaphragmatic surgical approach will allow of as nearly a complete division of all the gastric nerves as will a transthoracic approach. In somewhat less than 10 per cent of cases the pattern of the nerves is not uniform. In some cases numerous branches of the esophageal plexus fail to form into common trunks on one or both sides of the esophagus. In such cases the surgeon would encounter difficulty in sectioning all the gastric nerves.

AN ANATOMIC STUDY OF THE VAGUS NERVES

Influence on Choice of Surgical Approach in Patients with Chronic Peptic Ulcer

EDWIN M. MILLER, M.D.
and
CARL B. DAVIS Jr., M.D.
Chicago

The work of Dragstedt and his associates at the University of Chicago has aroused universal interest in the treatment of chronic peptic ulcer by section of the vagus nerves. Even though the elapsed time since their first operation has been only about three and one-half years, the clinical results in their series of approximately 80 cases has clearly demonstrated the value of this procedure.

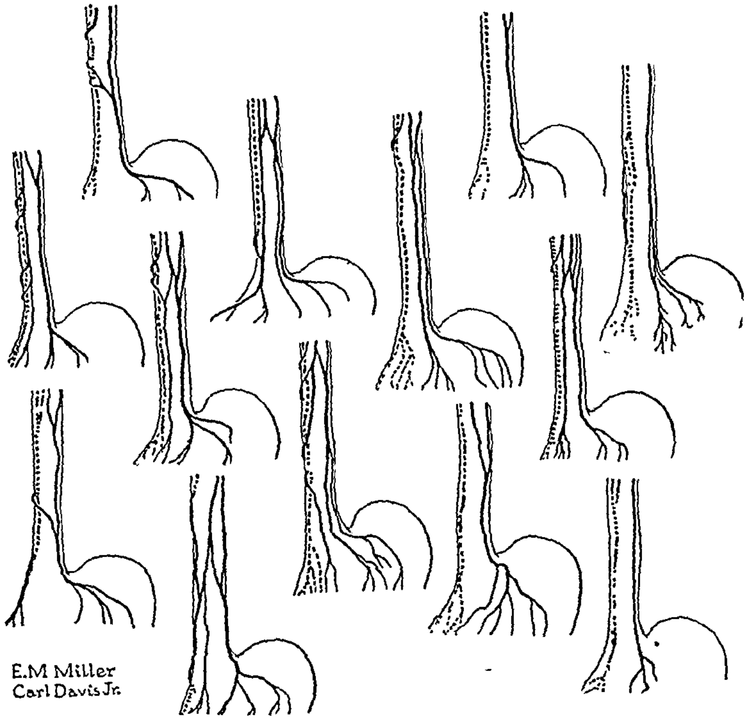
We have shared the interest of many others in this work, but we were not willing to proceed with this operation before we had investigated the likelihood of anomalous distribution of the vagus nerves along the lower portion of the esophagus, the idea being that unless all the branches are divided the results of the operation might be disappointing.

We have therefore gone into the autopsy room at the Presbyterian Hospital and through the cooperation of the pathologists been permitted to make dissections of the vagus nerves below the level of the pulmonary plexus in a series of 13 fresh bodies. The textbooks of anatomy state that normally these nerves after leaving the pulmonary plexus continue as a plexus about the esophagus, from which they proceed downward as two main trunks for a distance of 4 to 6 inches, the right becoming the posterior and the left the anterior trunk as they pass through the hiatus of the diaphragm and fan out on the walls of the stomach.

From the Department of Surgery, Presbyterian Hospital, and the University of Illinois College of Medicine.

The results of our studies have brought to light some interesting facts, as may be seen in the accompanying drawings. It will be noted that in only 3 instances was the arrangement comparable to that described in the anatomies as "normal," and in the remaining 10 bodies there was considerable variation in the number of main trunks and accessory branches.

In view of these findings we are of the opinion that in the abdominal approach with relatively poor exposure it would be a simple matter to leave undivided one or more of these branches, whereas with the transthoracic (supradiaphragmatic) approach on the left side with very careful elevation of the esophagus from its bed without bleeding (after division of the inferior pulmonary ligament) one has a clear view of this area and can more accurately make a careful dissection. We therefore strongly favor the supradiaphragmatic approach for division of the vagus nerves.



Dissection of 13 specimens at autopsy, *showing the variations in the distribution of* the vagus nerves. The posterior or right vagus nerve branches are shown by dotted lines, the anterior or left branches by continuous block lines. In only three dissections were conditions comparable to the so called "normal"

55 East Washington Street.

The Government's Research Program.—The Research and Development program of the federal government is as large as, and in many fields larger than, during the war. Current expenditures on research and development, which are at about twenty times the 1940 level, will approximate 1½ billion dollars during the year from July 1946 to July 1947, excluding expenditures on the Manhattan Project. This means not only that the federal government is conducting or financing a very large share of the total research and development now undertaken in the country but that federal policies with respect to research affect every industrial laboratory, university and individual scientist. . . . Expenditures on research related to human welfare are large in absolute terms but small in relation to all federal research and development expenditures. The Public Health Service has a budget of $11,000,000, the Department of Agriculture $37,000,000 and the Bureau of Standards $9,000,000.—Kidd, Charles V.: The Federal Government and the Shortage of Scientific Personnel, *Science*, Jan 24, 1947.

MECHANISM OF RADIATION EFFECTS AGAINST MALIGNANT TUMORS

SHIELDS WARREN, M.D.
Boston

One of the important ways of influencing growth, both normal and abnormal, is radiation. Whether applied deliberately, as for therapy of a tumor or the production, by Müller and others, of genetic effects through induced mutation or accidentally, as when epiphyseal growth of bone is arrested as a result of treating an adjacent osseous tumor, the effects of radiant energy are vividly apparent.

Whether used to end a war, as at Hiroshima and Nagasaki, or to cure a basal cell cancer of the skin, ionizing radiations act on organisms through direct production of intrinsic changes in exposed cells and through changes in the environment of the cells. The direct effects may kill, injure or induce somatic mutations in those cells that survive. Changes in morphology and growth rate are not infrequent among tumor cells which survive therapeutic radiation or among normal cells incidentally exposed and may be carried on in their descendants. Even the manner of response of the affected cells to the radiant energy may be profoundly altered, survivors among them often showing greatly increased resistance.

Since the whole basis of radiation therapy of tumors is their relative radiosensitivity as contrasted with that of corresponding normal tissues, it is well to evaluate present knowledge and to point out possible avenues for further research.

The years of observation and experimentation since the development by Roentgen of his apparatus and the recent rapid acceleration of research and development in the field of ionizing radiation incident to the utilization of nuclear energy have established for us certain basic facts.

It is the radiant energy absorbed by the tissue or cell that is effective, not that which is delivered to it. For example, a roentgen dose of 700 r generated at 180,000 volts will produce erythema of the skin, while a dose of 1,000 r generated at 1,000,000 volts is required to produce the same effect on the skin because of greater penetration and less absorption of the latter.

All types of ionizing radiations—the roentgen ray, the gamma ray, the alpha particle, the beta particle, the neutron, have essentially the same qualitative effects on cells exposed to them. It is impossible to determine by present means of study what type of ionizing radiation has produced a given change in cells. In general, tissue changes due to irradiation are characteristic, although some are difficult to distinguish from the effects of heat.

The first noticeable effect on cells is interference with mitosis—both diminution in mitotic activity and the appearance of chromosomal abnormalities. This is closely followed by vacuolization and swelling of the cytoplasm. Later pyknosis and autolysis of the injured

---

Eighth annual Barnard Hospital Lecture.

cells take place. Usually there is but little polymorphonuclear leukocytic infiltration of the irradiated tissue. Sometimes macrophages pick up dead cells or their fragments.

After the usual dose of radiation there is partial or complete recovery of some of the tumor cells, and were it not for the concomitant effects produced on the connective tissue stroma and blood vessels, no lasting effect on an irradiated part would be noted. Isolated cells may be extremely resistant. Over 100,000 r may be required to kill all the fibroblasts in a tissue culture.

One is accustomed to thinking of radiation as affecting a given area evenly and thoroughly. Actually, as far as the ultimate units of protoplasm are concerned, this is not the case. The following example, given by Crowther,[1] illustrates this point well: "Suppose that it were possible to pass, through the air of an ionisation chamber, X-radiation at an intensity of 1 r per second continuously, day and night, for 500 years, we should still leave about one-third of the molecules *unirradiated*."

The vascular endothelium is readily damaged, inducing thrombosis; hence local impairment of circulation in the tumor and tumor bed results. Subsequently to this there may be fibrosis and hyalinization of the vessel wall. The persisting superficial vessels in an irradiated zone usually eventually become telangiectatic.

Collagen within the field of irradiation becomes more abundant, the individual fibers first swell and then fuse, forming fairly dense hyaline, which acts as a barrier to the metabolic exchange of the tumor cells and hinders their spread into adjacent structures.

Some attempts have been made to formulate the varying response of tumors to therapeutic irradiation. The best known of these, the so-called law of Bergonié and Tribondeau, assumes that more primitive and consequently less differentiated cells are the most sensitive to damage by radiation and that well differentiated cells are relatively resistant. While this holds true to some degree, there are many exceptions to it.

By empiricism it has been possible to establish several general classes into which the various tumors may be divided in accordance with their response to irradiation. Not all tumors of a given type respond alike, but a fair degree of constancy prevails.

Those tumors that regress with a dose of irradiation that does but little harm to adjacent normal tissue may be called radiosensitive. By use of the usual size of fields and roentgen rays of moderate hardness doses ranging up to 2,500 r will cause regression of radiosensitive tumors. Among these tumors are lymphoma, angioendothelioma (Ewing) of bone and multiple myeloma.

Those tumors that regress when a dose is applied which is harmful to a moderate degree only to adjacent normal tissue are called radioresponsive. The doses in this class range from 2,500 to 5,000 r. Among these are basal cell cancers of the skin, some cancers of the thyroid and some of the cervix uteri.

Those tumors that do not regress unless given a dose of over 5,000 r are considered radioresistant. They do not respond any better than does adjacent normal tissue, which will be heavily damaged if enough dosage is given to cause regression. Malignant melanoma, carcinoma of the rectum and carcinoma of the breast fall in this group.

Radiosensitive tumors are not necessarily radiocurable. Often they are not, recurring in a resistant form after the initial regression. In addition each tumor may present individual variation in its response to irradiation, just as persons vary in their response. One of the best examples of this variation is shown by the response of a group to a slight dose of irradiation. One of the group may show no change, another may become leukopenic and still another may become leukopenic and later show leukocytosis.

Attempts to find means of selective irradiation of tumors have long been made. Most of these have been based on selective absorption by the tumor of various types of materials which would in turn absorb the roentgen rays and so enhance the effects of radiation. None have so far been successful.

In recent years the development of radioactive isotopes, first by the cyclotron and later by the pile, has opened up new fields for investigation. So far, radioactive phosphorus, which is selectively absorbed by rapidly growing cells, and radioactive iodine, which is selectively absorbed by thyroid cells under certain conditions, have been the most useful. The selective absorption of these elements makes possible to some degree irradiation of tumor cells without too much injury to normal cells.

My own experience has chiefly been with radioactive phosphorus. This is an effective means of palliation in some cases of leukemia and, if present experiments hold true, may be the method of choice in the treatment of primary polycythemia.

Radioactive iodine, which is selectively absorbed by normal, hyperplastic and, rarely, neoplastic thyroid cells, has proved to be of limited use.

Any discussion on radiation therapy would be incomplete were it to omit mention of the most potent source of radiant energy now available—the pile and atomic bomb. From Hiroshima, Nagasaki and Bikini[2] it has been learned that the biologic effects of the bombs are in large part due to the considerable amount of energy released in the form of ionizing radiations.

These ionizing radiations have much the same biologic effect as do roentgen rays, in fact some of them are identical with roentgen rays. It was learned from study of the Japanese exposed at Hiroshima and Nagasaki and from the animals exposed at Bikini that the effects of these ionizing radiations vary in general with the intensity of exposure. Those who received the heaviest radiation dosage died promptly in shock, others in whom leukopenia developed died of infection, in still others there developed hemorrhagic diathesis and in others anemia or pancytopenia. Aside from the hematopoietic and lymphoid systems, the gonads and the hair follicles were the chief organs to be damaged.

Thus the same general order of sensitivity prevails among the tissues exposed to radiation by an atomic blast as by therapeutic means.

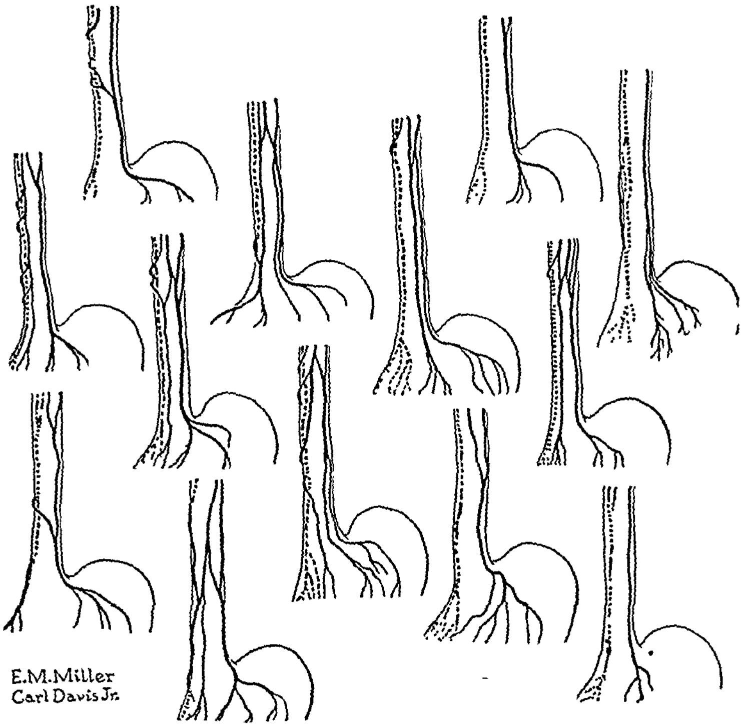
---

[1] Crowther, J. A.: The Biological Action of X-Rays—A Theoretical Review, Brit. J. Radiol. **11**: 132-145, 1938.

[2] Warren, S.: The Pathologic Effects of an Instantaneous Dose of Radiation, Cancer Research **6**: 449-453, 1946. Warren, S., and Draeger, R. H.: The Pattern of Injuries Produced by the Atomic Bombs at Hiroshima and Nagasaki, U. S. Nav. M. Bull. **46**: 1349-1354, 1946.

The results of our studies have brought to light some interesting facts, as may be seen in the accompanying drawings. It will be noted that in only 3 instances was the arrangement comparable to that described in the anatomies as "normal," and in the remaining 10 bodies there was considerable variation in the number of main trunks and accessory branches.

In view of these findings we are of the opinion that in the abdominal approach with relatively poor exposure it would be a simple matter to leave undivided one or more of these branches, whereas with the transthoracic (supradiaphragmatic) approach on the left side with very careful elevation of the esophagus from its bed without bleeding (after division of the inferior pulmonary ligament) one has a clear view of this area and can more accurately make a careful dissection. We therefore strongly favor the supradiaphragmatic approach for division of the vagus nerves.



Dissection of 13 specimens at autopsy, showing the variations in the distribution of the vagus nerves. The posterior or right vagus nerve branches are shown by dotted lines, the anterior or left branches by continuous block lines. In only three dissections were conditions comparable to the so-called "normal."

55 East Washington Street.

The Government's Research Program.—The Research and Development program of the federal government is as large as, and in many fields larger than, during the war. Current expenditures on research and development, which are at about twenty times the 1940 level, will approximate 1½ billion dollars during the year from July 1946 to July 1947, excluding expenditures on the Manhattan Project. This means not only that the federal government is conducting or financing a very large share of the total research and development now undertaken in the country but that federal policies with respect to research affect every industrial laboratory, university and individual scientist. . . . Expenditures on research related to human welfare are large in absolute terms but small in relation to all federal research and development expenditures. The Public Health Service has a budget of $11,000,000, the Department of Agriculture $37,000,000 and the Bureau of Standards $9,000,000.—Kidd, Charles V.: The Federal Government and the Shortage of Scientific Personnel, *Science*, Jan. 24, 1947.

MECHANISM OF RADIATION EFFECTS AGAINST MALIGNANT TUMORS

SHIELDS WARREN, M.D.
Boston

One of the important ways of influencing growth, both normal and abnormal, is radiation. Whether applied deliberately, as for therapy of a tumor or the production, by Müller and others, of genetic effects through induced mutation or accidentally, as when epiphyseal growth of bone is arrested as a result of treating an adjacent osseous tumor, the effects of radiant energy are vividly apparent.

Whether used to end a war, as at Hiroshima and Nagasaki, or to cure a basal cell cancer of the skin, ionizing radiations act on organisms through direct production of intrinsic changes in exposed cells and through changes in the environment of the cells. The direct effects may kill, injure or induce somatic mutations in those cells that survive. Changes in morphology and growth rate are not infrequent among tumor cells which survive therapeutic radiation or among normal cells incidentally exposed and may be carried on in their descendants. Even the manner of response of the affected cells to the radiant energy may be profoundly altered, survivors among them often showing greatly increased resistance.

Since the whole basis of radiation therapy of tumors is their relative radiosensitivity as contrasted with that of corresponding normal tissues, it is well to evaluate present knowledge and to point out possible avenues for further research.

The years of observation and experimentation since the development by Roentgen of his apparatus and the recent rapid acceleration of research and development in the field of ionizing radiation incident to the utilization of nuclear energy have established for us certain basic facts.

It is the radiant energy absorbed by the tissue or cell that is effective, not that which is delivered to it. For example, a roentgen dose of 700 r generated at 180,000 volts will produce erythema of the skin, while a dose of 1,000 r generated at 1,000,000 volts is required to produce the same effect on the skin because of greater penetration and less absorption of the latter.

All types of ionizing radiations—the roentgen ray, the gamma ray, the alpha particle, the beta particle, the neutron, have essentially the same qualitative effects on cells exposed to them. It is impossible to determine by present means of study what type of ionizing radiation has produced a given change in cells. In general, tissue changes due to irradiation are characteristic, although some are difficult to distinguish from the effects of heat.

The first noticeable effect on cells is interference with mitosis—both diminution in mitotic activity and the appearance of chromosomal abnormalities. This is closely followed by vacuolization and swelling of the cytoplasm. Later pyknosis and autolysis of the injured

---

Eighth annual Barnard Hospital Lecture.

cells take place. Usually there is but little polymorphonuclear leukocytic infiltration of the irradiated tissue. Sometimes macrophages pick up dead cells or their fragments.

After the usual dose of radiation there is partial or complete recovery of some of the tumor cells, and were it not for the concomitant effects produced on the connective tissue stroma and blood vessels, no lasting effect on an irradiated part would be noted. Isolated cells may be extremely resistant. Over 100,000 r may be required to kill all the fibroblasts in a tissue culture.

One is accustomed to thinking of radiation as affecting a given area evenly and thoroughly. Actually, as far as the ultimate units of protoplasm are concerned, this is not the case. The following example, given by Crowther,[1] illustrates this point well: "Suppose that it were possible to pass, through the air of an ionisation chamber, X-radiation at an intensity of 1 r per second continuously, day and night, for 500 years, we should still leave about one-third of the molecules *unirradiated*."

The vascular endothelium is readily damaged, inducing thrombosis; hence local impairment of circulation in the tumor and tumor bed results. Subsequently to this there may be fibrosis and hyalinization of the vessel wall. The persisting superficial vessels in an irradiated zone usually eventually become telangiectatic.

Collagen within the field of irradiation becomes more abundant, the individual fibers first swell and then fuse, forming fairly dense hyaline, which acts as a barrier to the metabolic exchange of the tumor cells and hinders their spread into adjacent structures.

Some attempts have been made to formulate the varying response of tumors to therapeutic irradiation. The best known of these, the so-called law of Bergonié and Tribondeau, assumes that more primitive and consequently less differentiated cells are the most sensitive to damage by radiation and that well differentiated cells are relatively resistant. While this holds true to some degree, there are many exceptions to it.

By empiricism it has been possible to establish several general classes into which the various tumors may be divided in accordance with their response to irradiation. Not all tumors of a given type respond alike, but a fair degree of constancy prevails.

Those tumors that regress with a dose of irradiation that does but little harm to adjacent normal tissue may be called radiosensitive. By use of the usual size of fields and roentgen rays of moderate hardness doses ranging up to 2,500 r will cause regression of radiosensitive tumors. Among these tumors are lymphoma, angioendothelioma (Ewing) of bone and multiple myeloma.

Those tumors that regress when a dose is applied which is harmful to a moderate degree only to adjacent normal tissue are called radioresponsive. The doses in this class range from 2,500 to 5,000 r. Among these are basal cell cancers of the skin, some cancers of the thyroid and some of the cervix uteri.

Those tumors that do not regress unless given a dose of over 5,000 r are considered radioresistant. They do not respond any better than does adjacent normal tissue, which will be heavily damaged if enough dosage is given to cause regression. Malignant melanoma, carcinoma of the rectum and carcinoma of the breast fall in this group.

Radiosensitive tumors are not necessarily radiocurable. Often they are not, recurring in a resistant form after the initial regression. In addition each tumor may present individual variation in its response to irradiation, just as persons vary in their response. One of the best examples of this variation is shown by the response of a group to a slight dose of irradiation. One of the group may show no change, another may become leukopenic and still another may become leukopenic and later show leukocytosis.

Attempts to find means of selective irradiation of tumors have long been made. Most of these have been based on selective absorption by the tumor of various types of materials which would in turn absorb the roentgen rays and so enhance the effects of radiation. None have so far been successful.

In recent years the development of radioactive isotopes, first by the cyclotron and later by the pile, has opened up new fields for investigation. So far, radioactive phosphorus, which is selectively absorbed by rapidly growing cells, and radioactive iodine, which is selectively absorbed by thyroid cells under certain conditions, have been the most useful. The selective absorption of these elements makes possible to some degree irradiation of tumor cells without too much injury to normal cells.

My own experience has chiefly been with radioactive phosphorus. This is an effective means of palliation in some cases of leukemia and, if present experiments hold true, may be the method of choice in the treatment of primary polycythemia.

Radioactive iodine, which is selectively absorbed by normal, hyperplastic and, rarely, neoplastic thyroid cells, has proved to be of limited use.

Any discussion on radiation therapy would be incomplete were it to omit mention of the most potent source of radiant energy now available—the pile and atomic bomb. From Hiroshima, Nagasaki and Bikini [2] it has been learned that the biologic effects of the bombs are in large part due to the considerable amount of energy released in the form of ionizing radiations.

These ionizing radiations have much the same biologic effect as do roentgen rays, in fact some of them are identical with roentgen rays. It was learned from study of the Japanese exposed at Hiroshima and Nagasaki and from the animals exposed at Bikini that the effects of these ionizing radiations vary in general with the intensity of exposure. Those who received the heaviest radiation dosage died promptly in shock, others in whom leukopenia developed died of infection, in still others there developed hemorrhagic diathesis and in others anemia or pancytopenia. Aside from the hematopoietic and lymphoid systems, the gonads and the hair follicles were the chief organs to be damaged.

Thus the same general order of sensitivity prevails among the tissues exposed to radiation by an atomic blast as by therapeutic means.

---

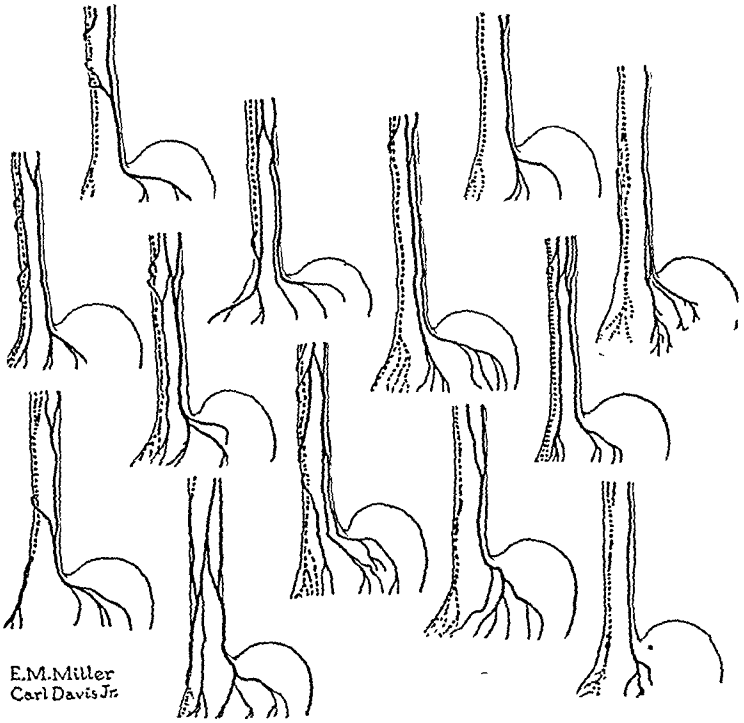
[1] Crowther, J. A.: The Biological Action of X-Rays—A Theoretical Review, Brit. J. Radiol. **11**: 132-145, 1938.

[2] Warren, S.: The Pathologic Effects of an Instantaneous Dose of Radiation, Cancer Research **6**: 449-453, 1946. Warren, S., and Draeger, R. H.: The Pattern of Injuries Produced by the Atomic Bombs at Hiroshima and Nagasaki, U. S. Nav. M. Bull. **46**: 1349-1354, 1946

The results of our studies have brought to light some interesting facts, as may be seen in the accompanying drawings. It will be noted that in only 3 instances was the arrangement comparable to that described in the anatomies as "normal," and in the remaining 10 bodies there was considerable variation in the number of main trunks and accessory branches.

In view of these findings we are of the opinion that in the abdominal approach with relatively poor exposure it would be a simple matter to leave undivided one or more of these branches, whereas with the transthoracic (*supradiaphragmatic*) approach on the left side with *very careful elevation of the esophagus from its bed* without bleeding (after division of the inferior pulmonary ligament) one has a clear view of this area and can more accurately make a careful dissection. We therefore *strongly favor the supradiaphragmatic* approach for division of the vagus nerves.

55 East Washington Street.



Dissection of 13 specimens at autopsy, showing the variations in the distribution of the vagus nerves. The posterior or right vagus nerve branches are shown by dotted lines, the anterior or left branches by continuous block lines. In only three dissections were conditions comparable to the so-called "normal."

The Government's Research Program.—The Research and Development program of the federal government is as large as, and in many fields larger than, during the war. Current expenditures on research and development, which are at about twenty times the 1940 level, will approximate 1½ billion dollars during the year from July 1946 to July 1947, excluding expenditures on the Manhattan Project. This means not only that the federal government is conducting or financing a very large share of the total research and development now undertaken in the country but that federal policies with respect to research affect every industrial laboratory, university and individual scientist. . . . Expenditures on research related to human welfare are large in absolute terms but small in relation to all federal research and development expenditures. The Public Health Service has a budget of $11,000,000, the Department of Agriculture $37,000,000 and the Bureau of Standards $9,000,000.—Kidd, Charles V.: The Federal Government and the Shortage of Scientific Personnel, *Science*, Jan. 24, 1947.

MECHANISM OF RA AGAINST MALIGN

SHIELDS WARRE
Boston

One of the important ways
both normal and abnormal, is
applied deliberately, as for thera
production, by Müller and othe
through induced mutation or a
epiphyseal growth of bone is arr
treating an adjacent osseous tu
radiant energy are vividly apparent.

Whether used to end
shima and Nagasaki, or t
cancer of the skin, ionizi
on organisms through dir
intrinsic changes in exposed
changes in the environment
direct effects may kill, inj
somatic mutations in those cel
Changes *in morphology* and g
not infrequent among tumor
survive therapeutic radiation or
mal cells incidentally exposed
carried on in their descendants.
manner of response of the affect
the radiant energy may be
altered, survivors among them oft
ing greatly increased resistance.

Since the whole basis of radiation
of tumors is *their relative radiosen*
as contrasted with that of corresp
normal tissues, it is well to evaluate p
knowledge and to point out possible ave
for further research.

The years of observation and experime
tion since the development by Roentgen
his apparatus and the recent rapid acceler
tion of research and development in the fiel
of ionizing radiation incident to the utilization of nuclear energy have established for us certain basic facts.

It is the radiant energy absorbed by the tissue or cell that is effective, not that which is delivered to it. For example, *a roentgen dose of 700 r* generated at 180,000 volts will produce erythema of the skin, while a dose of 1,000 r generated at 1,000,000 volts is required to produce the same effect on the skin because of greater *penetration and less absorption of the latter.*

All types of ionizing radiations—the roentgen ray, the gamma ray, the alpha particle, the beta particle, the neutron, have essentially the same qualitative effects *on cells exposed to them. It is impossible to determine* by present means of study what type of ionizing radiation has produced a given change in cells. In general, tissue changes due to irradiation are characteristic, *although some are difficult to distinguish from the* effects of heat.

The first noticeable effect on cells is interference with mitosis—both diminution in mitotic activity and the *appearance of chromosomal abnormalities.* This is closely followed by vacuolization and swelling of the cytoplasm. Later pyknosis and autolysis of the injured

---

Eighth annual Barnard Hospital Lecture.

cells take place. Usually there is but little polymorphonuclear leukocytic infiltration of the irradiated tissue. Sometimes macrophages pick up dead cells or their fragments.

After the usual dose of radiation there is partial or complete recovery of some of the tumor cells, and were it not for the concomitant effects produced on the connective tissue stroma and blood vessels, no lasting effect on an irradiated part would be noted. Isolated cells may be extremely resistant. Over 100,000 r may be required to kill all the fibroblasts in a tissue culture.

One is accustomed to thinking of radiation as affecting a given area evenly and thoroughly. Actually, as far as the ultimate units of protoplasm are concerned, this is not the case. The following example, given by Crowther,[1] illustrates this point well: "Suppose that it were possible to pass, through the air of an ionisation chamber, X-radiation at an intensity of 1 r per second continuously, day and night, for 500 years, we should still leave about one-third of the molecules *unirradiated.*"

The vascular endothelium is readily damaged, inducing thrombosis; hence local impairment of circulation in the tumor and tumor bed results. Subsequently to this there may be fibrosis and hyalinization of the vessel wall. The persisting superficial vessels in an irradiated zone usually eventually become telangiectatic.

Collagen within the field of irradiation becomes more abundant, the individual fibers first swell and then fuse, forming fairly dense hyaline, which acts as a barrier to the metabolic exchange of the tumor cells and hinders their spread into adjacent structures.

Some attempts have been made to formulate the varying response of tumors to therapeutic irradiation. The best known of these, the so-called law of Bergonié and Tribondeau, assumes that more primitive and consequently less differentiated cells are the most sensitive to damage by radiation and that well differentiated cells are relatively resistant. While this holds true to some degree, there are many exceptions to it.

By empiricism it has been possible to establish several general classes into which the various tumors may be divided in accordance with their response to irradiation. Not all tumors of a given type respond alike, but a fair degree of constancy prevails.

Those tumors that regress with a dose of irradiation that does but little harm to adjacent normal tissue may be called radiosensitive. By use of the usual size of fields and roentgen rays of moderate hardness doses ranging up to 2,500 r will cause regression of radiosensitive tumors. Among these tumors are lymphoma, angioendothelioma (Ewing) of bone and multiple myeloma.

Those tumors that regress when a dose is applied which is harmful to a moderate degree only to adjacent normal tissue are called radioresponsive. The doses in this class range from 2,500 to 5,000 r. Among these are basal cell cancers of the skin, some cancers of the thyroid and some of the cervix uteri.

Those tumors that do not regress unless given a dose of over 5,000 r are considered radioresistant. They do not respond any better than does adjacent normal tissue, which will be heavily damaged if enough dosage is given to cause regression. Malignant melanoma, carcinoma of the rectum and carcinoma of the breast fall in this group.

Radiosensitive tumors are not necessarily radiocurable. Often they are not, recurring in a resistant form after the initial regression. In addition each tumor may present individual variation in its response to irradiation, just as persons vary in their response. One of the best examples of this variation is shown by the response of a group to a slight dose of irradiation. One of the group may show no change, another may become leukopenic and still another may become leukopenic and later show leukocytosis.

Attempts to find means of selective irradiation of tumors have long been made. Most of these have been based on selective absorption by the tumor of various types of materials which would in turn absorb the roentgen rays and so enhance the effects of radiation. None have so far been successful.

In recent years the development of radioactive isotopes, first by the cyclotron and later by the pile, has opened up new fields for investigation. So far, radioactive phosphorus, which is selectively absorbed by rapidly growing cells, and radioactive iodine, which is selectively absorbed by thyroid cells under certain conditions, have been the most useful. The selective absorption of these elements makes possible to some degree irradiation of tumor cells without too much injury to normal cells.

My own experience has chiefly been with radioactive phosphorus. This is an effective means of palliation in some cases of leukemia and, if present experiments hold true, may be the method of choice in the treatment of primary polycythemia.

Radioactive iodine, which is selectively absorbed by normal, hyperplastic and, rarely, neoplastic thyroid cells, has proved to be of limited use.

Any discussion on radiation therapy would be incomplete were it to omit mention of the most potent source of radiant energy now available—the pile and atomic bomb. From Hiroshima, Nagasaki and Bikini[2] it has been learned that the biologic effects of the bombs are in large part due to the considerable amount of energy released in the form of ionizing radiations.

These ionizing radiations have much the same biologic effect as do roentgen rays, in fact some of them are identical with roentgen rays. It was learned from study of the Japanese exposed at Hiroshima and Nagasaki and from the animals exposed at Bikini that the effects of these ionizing radiations vary in general with the intensity of exposure. Those who received the heaviest radiation dosage died promptly in shock, others in whom leukopenia developed died of infection, in still others there developed hemorrhagic diathesis and in others anemia or pancytopenia. Aside from the hematopoietic and lymphoid systems, the gonads and the hair follicles were the chief organs to be damaged.

Thus the same general order of sensitivity prevails among the tissues exposed to radiation by an atomic blast as by therapeutic means.

---

[1] Crowther, J. A.: The Biological Action of X-Rays—A Theoretical Review, Brit. J. Radiol. **11:** 132-145, 1938.

[2] Warren, S.: The Pathologic Effects of an Instantaneous Dose of Radiation, Cancer Research **6:** 449-453, 1946. Warren, S., and Draeger, R. H.: The Pattern of Injuries Produced by the Atomic Bombs at Hiroshima and Nagasaki, U. S. Nav. M. Bull. **46:** 1349-1354, 1946.

Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association
and Hygeia, the Health Magazine
Chicago

(Continued from page 392)

(NOTE.—*Following is the fifteenth chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of THE JOURNAL. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in THE JOURNAL. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—ED.)

CHAPTER 15. *The Permanent Secretary Retires and Dr. George H. Simmons Succeeds*

1895-1899

1895

BOOK REVIEWS

Book reviews have always been a source of serious discussion in medical periodicals. When publishers owned most of the medical journals in the United States a definite relationship prevailed between the character of the review, the owner of the periodical and the publisher. This abuse finally reached such proportions that THE JOURNAL found it necessary in its issue of Jan. 12, 1895, to talk about book reviews and to remind its readers that THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, at least, would publish criticisms and not eulogies of new books. Some publishers had already developed the technic of avoiding distribution of books for review to periodicals which would not guarantee them favorable reviews.

Improvements in medical journals were, however, definitely on the march. In THE JOURNAL for Jan. 26, 1895 the editor announced that he would no longer publish anonymous communications, a rule that has been followed almost invariably since that date. Unless a physician cares to give his name in discussing the work of another physician or some activity of the American Medical Association, he should not wish the editor to take the responsibility for views which, in most instances, when they are to be published anonymously are venomous and hypercritical rather than honest.

Certain themes recur at cycles of five or ten years in the history of the Association. In March of 1895 the editor said:

> A certain number find great fault with THE JOURNAL, others are alarmed at what they call the *political ring rule*, and others think the Association ethics is a most serious rock of offense. . . . This is the friction that is a part of all organized movements and indicates growth and progress which is always very promising for the future.

THE FIRST FIRE

On March 31, 1895, the day being Sunday, a fire resulted in serious damage to the equipment and a flooding of the offices of THE JOURNAL. Two of the trustees and the editor arrived in an hour to find the fire practically extinguished. THE JOURNAL appeared on time, but it was quite a strain on the staff. As the year went on, the struggle for improved quality in advertising in medical periodicals began to burst more and more into the open. Letters appeared in various publications with the definite trend toward cleaning advertising pages. The committee in charge of the Rush monument was still at work and still not making much progress. A picture of Benjamin Rush was printed in May 1895, and the committee was urged to collect enough money to build this monument.

In his president's address published May 11, 1895 Dr. Donald Maclean of Detroit devoted himself largely to the history of medicine, with special emphasis on Edinburgh, where he had had his own education. He closed his address with another plea for a national department of health.

THE BALTIMORE SESSION

The annual session, held in Baltimore May 7-10, 1895, was to make history of the greatest importance for the future of medicine in the United States. The population of the United States had increased from 35,000,000 in 1866 to 70,000,000 in 1895. The population of Baltimore had increased from 250,000 to 500,000. Dr. William Osler was chairman of the committee on arrangements, and a number of interesting receptions and visits to educational institutions had been provided.

THE DRIVE FOR CLEAN ADVERTISING

The Medical Society of the State of Pennsylvania had taken the leadership in the attempt to improve the quality of advertising in medical periodicals and had brought a case before the Judicial Council against the practice. The Judicial Council discovered that the trustees and the editor had perhaps inadvertently published some objectionable advertisements. Dr. Solomon Solis-Cohen, who had assumed leadership in this movement, asked for a special committee to take up the matter with the Board of Trustees at a later hour in the session. Dr. John B. Hamilton, editor of THE JOURNAL, by a parliamentary procedure endeavored to prevent the discussion, whereupon Dr. Solis-Cohen said:

> I am speaking to the resolution. The object of this committee is to digest the report, to consider the criticisms that have been offered publicly, and to consider further what the Trustees have to say in relation thereto calmly, deliberately, without prejudice, and then report to the Association at a time when it can again be calmly discussed by the Association with all the necessary data before it. It is to prevent hasty judgment, favorable or unfavorable, that this resolution is offered. It is offered as a means of peace, as a means of carrying out the will of the Association, as a means of elevating THE JOURNAL of the Association to the proud position that it ought to occupy as the leader and not the follower of the medical press of the United States. Therefore we ask that this resolution be adopted.

After much discussion, the resolution proposed by Dr. Solis-Cohen, that a committee of three work with the trustees, was tabled. Then a new resolution introduced by Dr. E. Fletcher Ingals requesting a committee to consult with the Board of Trustees was passed following a second of the motion by Dr. Solis-Cohen. Dr. Cochran took it that the appointment of such a committee was an indictment of the Board of Trustees. A motion was then made to table the discussion and, following a call for a count, the motion was tabled by a vote of 138 to 108. But the fight was not ended! Following an interlude of discussion on improved rank for medical officers of the Navy, Dr. Leartus Connor of Detroit again introduced the subject and demanded a survey as to the proportion of the membership of the American Medical Association who prescribed secret proprietary remedies. This resolution was briskly discussed and again the question was laid on the table.

The Board of Trustees reported that the editor had been instructed to refuse advertisements of proprietary remedies which were not accompanied by a formula:

> Still further to comply with what appears to be the desire of a large number of those interested in the highest success of THE JOURNAL, the editor, with the termination of present contracts, has been instructed to accept no advertisements of medicinal preparations the proprietors of which do not give a formula containing the official or chemical name and quantity of each composing ingredient to be inserted as a part of the advertisement.

When this report was read, Dr. Solis-Cohen congratulated the trustees on the fact that the Association could "at last stand upon an honest platform." He felt that the Association should demand that every other medical journal should make its pages clean from the shame of "patent" medicines.

> On behalf of the Pennsylvania delegation, as commissioned by them officially, and unofficially on behalf of the hundreds of members who came to me, as well as of various medical societies, to express their desire that we go forward to cleanse THE JOURNAL, I move the approval of the report of the Board of Trustees.

There was great applause and the motion was carried.

And still the issue was not dead. After an interlude of discussion on the raising of the dues, Dr. A. Koenig of Pittsburgh moved a vote of confidence for the Board of Trustees. Dr. Hamilton objected to this motion. There was a lot of discussion back and forth, and finally Dr. Solis-Cohen moved that the whole new discussion be tabled and it was tabled.

AMENDMENTS TO THE BY-LAWS

Next considerable discussion arose over amendments to the Constitution and By-Laws, including a proposal to establish a new section on orthopedic surgery. Dr. N. S. Davis contended that there had been too much carelessness in proposing amendments to the Constitution and By-Laws and that there ought to be more formal proposal of such amendments.

THE INDEX MEDICUS

The *Index Medicus* was again in financial difficulties, and Dr. William Osler offered a resolution requesting members of the Association to support the *Index Medicus*.

THE BATTLE OVER THE SECRETARY

This meeting has also become noted in the history of the Association because of the action that was taken regarding the permanent secretary. There was a provision in the Constitution that the permanent secretary should remain in office until either by death, resignation or removal by a two-thirds vote of the Association a change should take place. The committee on nominations brought in the name of Frank Woodbury of Pennsylvania as secretary. Dr. E. D. Ferguson of New York pointed out that the permanent secretary was really permanent and he moved that the portion of the report pertaining to the permanent secretary be not agreed to. Dr. I. N. Quimby said that the present permanent secretary had served thirty-one years and he concluded with the following emotional appeal:

> Let the sentiment of this Association be *fiat justitia*—exact justice and mercy to every one, whether he be high or low, and let this Association sustain the present secretary, at least for the present. Let us not send him home as though he had some affliction, but let us try to make him feel happy.

This motion was about to pass when Dr. William Osler stood on his chair—the better to be heard—and made the famous speech for which he was hissed, saying bluntly:

> *Fiat justitia* for the Association is all right, but let the quality of mercy be not strained. I stand here and say plainly and honestly before Dr. Atkinson what I and many other members have said behind his back, that he is not an efficient secretary of this Association, and that we have not found him so. [Hisses, followed by applause.] You may hiss if you will, but I unhesitatingly say that no more important step in advance will be taken by the Association than when it changes its secretary. [Cries of Question! Question!]

President Maclean put the motion that the present incumbent remain in office, and it was carried by a large majority. Then Dr. I. N. Love moved that the Constitution be amended so that in the future the secretary should be elected annually.

After the vote was taken, Osler left his seat, walked up onto the platform and took Dr. Atkinson's hand and whispered to him for several minutes. Exactly what was said was not recorded, but apparently it was pleasant. However, the meeting must have had some repercussions in the Osler home. Mrs. Osler wrote in a letter to a friend on June 14:

> After you left, my mother soon departed, and she was followed by one relation and friend after another and I only had time to catch my breath and be ready for that — (you know) American Med. Asso. Our plans were changed somewhat as Dr. Osler's sister-in-law died very suddenly and we of course did not take part in any of the entertainments—and Dr. Osler recalled his dinner invitations. Dr. Donald Maclean (A. M. A. President for the year) and his wife stayed here, also Dr. and Mrs. McGuire from Richmond. I hesitate to express my opinion about the A. M. A. probably yours is the same. Thank goodness it cannot come here again while we live here. . . . Dr. Osler distinguished himself by maligning old Atkinson the secretary—I was at the meeting and frightened to death when I heard him pronounce the "secretary absolutely incompetent." It was a benefit to the Association I am told, but I fail to see it.

William B. Atkinson, the permanent secretary, was by temperament and experience really entitled to hold the position that he held for so many years, until the tempest raised by William Osler led to his final resignation. He was born in Pennsylvania in 1832 and was a graduate of the Central High School in Philadelphia and then from the Jefferson Medical College in 1853 after three years of preceptorship with Dr. Samuel McClellan. He had been a correspondent of the *New Jersey Medical and Surgical Reporter*, *New York Medical Times*, the *Nashville Medical Journal* and the *New Orleans Medical Journal* and co-editor with Dr. S. W. Butler of the *Medical and Surgical Reporter*. When Dr. S. D. Gross edited the *North American*

Medico-Chirurgical Review he became its obstetric editor. Eventually he published a book of biographies of American physicians. He had been editor of the Transactions of the American Medical Association as secretary, and also editor of the Transactions of the State Medical Society of Pennsylvania when secretary of that organization. His book of biographies called "Physicians and Surgeons of the United States," published in 1878, included the lives of 1,873 physicians, and there had been a second edition in 1880. He held many teaching positions and was the author of a book called "Hints in the Obstetric Practice" and of another called "Therapeutics of Gynecology and Obstetrics." Dr. Atkinson died in Philadelphia Nov. 23, 1909.

PROGRESS WITH THE JOURNAL

In volume 25 for 1895 the name of Dr. Ludvig Hektoen appeared for the first time as an editorial contributor. There was also the name of Dr. John Ridlon. Dr. Hektoen since 1895 has contributed a number of editorials to the columns year after year and has been especially helpful in training young men to take an interest in journalism and in editorial work.

The Journal was happy in July of 1895 because it included a double page spread in three colors illustrating pathologic appearances in endarteritis. The Journal was definitely improving in the quality of its illustrations and in the make up of its pages.

THE BATTLE OF THE MONUMENTS

The battle of the monuments was now definitely on. The American Surgical Association was behind the movement to erect a statue to Professor S. D. Gross. The monument to Benjamin Rush was still having hard sledding. Then came a movement on the part of the homeopathic group to erect a monument to Samuel Christian Friedrich Hahnemann. The Rush monument fund had now reached $3,357.39.

Interesting is a letter which appeared in The Journal for Sept. 21, 1895, stating that The Journal was now too advanced for many of its readers and that it ought to print articles of less scientific value in order to reach a doctor-reader audience. This continued to be a perennial reminder that some physicians are not quite up to others and that men in the lower brackets feel that journals ought to be edited to their levels.

Louis Pasteur, among the most famous of all the names in medicine, died of paralysis at his home in Paris Sept. 28, 1895, aged 73. The first steamer built by the United States government for its quarantine service had been named in his honor. Long before the time of his death it had been recognized that his had been among the greatest of all contributions to the advancement of medical science.

The library of the American Medical Association had been transferred to the Newberry Library of Chicago. The librarian at the Newberry Library discovered in 1895 that it did not even contain a full set of The Journal of the American Medical Association or, in fact, even one volume. It had, however, begun to accumulate some excellent incunabula and some complete sets of medical periodicals.

PARLIAMENTARY LAW

The debates in the annual sessions of the previous two years were so stormy that one member, Dr. A. C. Simonton of San Jose, Calif., in the cooling off period of 1895 wrote a long letter about parliamentary law. He referred particularly to the trustees, who apparently kept copies of Roberts' "Rules of Order" in their pockets and had to refer to them frequently in the midst of debates. Dr. Simonton was seriously interested in parliamentary law, and he felt that it was about time that the rulings in the House of Delegates of the American Medical Association be more in accord with established principles.

1896

ATLANTA

On March 14, 1896 Dr. F. E. Stewart of Detroit proposed that the members of the Association have a permanent badge. He had his own ideas for such an emblem and he invited suggestions from others.

The two year lease of the Association on the rooms at 86 Fifth Avenue terminated April 30, 1896 and it became necessary to move. The stay in the Fifth Avenue headquarters had not been happy. There had been no recovery of anything on account of the damage by fire and water. The power was always breaking down, the halls were dirty, and Dr. Hamilton could not make the owner make good on his verbal promises. A lease was therefore made with the owners of the Dental Building at 61 Market Street, so that the Association occupied the third floor in a new fireproof building. The Association purchased an electric motor so that it could run its own presses. Dr. Hamilton felt, however, that the business necessity of a permanent home for The Journal was becoming more and more urgent every year. "The bad policy of paying rent," he said, "will be apparent." Thus he urged that the Association take the necessary steps to provide a fund for the purchase of property, the payment of interest and the gradual extinguishment of its debt. "The present move," he said "should be the last move in a rented building. Next time we should go into the permanent home of the Association."

SPECIAL TRAIN TROUBLE

Later in the same month the editor of The Journal was agitated because some of the members were working independently on the railroads and he had in his responsibility the matter of the special train to Atlanta for the 1896 session. One physician in Chicago who could not get a pass to Atlanta for his wife negotiated with another railroad and tried to work out a special deal with that road. A drug firm in another city, which conducted a medical journal in Chicago, tried to get a special train for that group. This interfered somewhat with the ideas of Dr. Hamilton, and he ended his editorial snappily: "Whether The Journal ever runs another special to any of the meetings depends upon the view the members take of it."

Now comes the story of a special train which must have given Dr. Hamilton a maximum of annoyance. The train left Chicago on Sunday night, May 3, by the Big Four Road. Everybody was happy and the train pulled into Cincinnati at 9:05 that night exactly on time. The train was now turned over to the Queen and Crescent Railroad. Here Dr. Hamilton discovered that the train occupied by his group would be held in Cincinnati until another train coming from Detroit—operated under the auspices of a magazine called *Detroit Medicine* and in charge of Dr. Harold Moyer of Chicago and Dr. Whitmore of Parke, Davis & Company—could join with his group. The Detroit party had about 33 people, who started out on the Monon route and were delayed somewhere in Indiana, so that Dr. Hamilton's group was held until 11:30 at night without any supper. (It was supper in those days; dinner came in some time later.) At 11:30 at night everybody got restless and so the Queen and Crescent Railroad brought down a man—"the alleged superintendent," Dr. Hamilton calls him—"a certain Mr. Stephens," to interview the passengers. Mr. Stephens, after some argument, told Dr. Hamilton that the cars belonged to the railroad and that he would move them out of the depot when he got ready. "Arguments, persuasion and entreaties were of no avail to the all-powerful Mr. Stephens, who finally, becoming tired of the importunities, sent the train across the river to Ludlow, Ky., where they completed the allotted period of the detention and were finally joined by the delayed contingent as aforesaid." The train arrived in Chattanooga at 10:30 a. m. and finally the people got something to eat. In the nature of a vast understatement, Dr. Hamilton writes "The originators of the trouble, including the alleged Stephens, were not extremely popular with any of the members of THE JOURNAL party." He continues "A number of physicians on the train made up their minds that they had learned something in the matter of travel over certain railroads, and that when it came to advising patients going South for the winter what line to take in order to have the most comfort and humane attention, they would know how to advise them. A more unfeeling and heartless treatment of passengers has seldom been witnessed than that received at the hands of Mr. Stephens of the Queen & Crescent." Were Dr. Hamilton alive today, we would tell him about the special which left Chicago for San Francisco in 1946 and arrived fourteen hours late.

CELEBRATION OF THE SEMICENTENNIAL

At the Atlanta session, among the first of the resolutions offered was one proposing a suitable celebration of the semicentennial meeting in Philadelphia in 1897.

THE PERMANENT SECRETARY

The question of the permanent secretary continued to be agitated by Dr. I. N. Love of St. Louis, but apparently the membership were not yet ready to make a change. Dr. Love in his discussion said that the ruling that had been made at the Baltimore convention to the effect that the Constitution precluding any change in the secretaryship "paralyzed everybody, consequently proper consideration was not given to the question. I know it paralyzed me," he continued, "and I do not easily paralyze." (Laughter.) Questions elicited the fact that the Constitution was so written in 1864. There was a good deal of discussion on the matter. There was some criticism of Dr. Maclean for not having put the question at the Baltimore meeting, and he suggested that in the interest of peace he had avoided it. Then there was a call for the reading of the minutes of the Baltimore session because apparently there was some doubt as to just what was done and there was some question as to whether the minutes as printed in THE JOURNAL were actually minutes of the meeting. The question was particularly agitated by Dr. H. Bert Ellis of California. Eventually the situation was cleared by a resolution to the effect that the minutes as published in THE JOURNAL be recorded as official minutes. The secretary then arose to point out that he kept his minutes in a big book, that he wrote them out every evening before he went to sleep and that the editor published them in THE JOURNAL exactly as they were in the book. He offered to have the book available for inspection but he did not think it essential because such a book would be too cumbersome to carry around from place to place. The discussion continued until it was lost in the midst of a lot of confusion and apparently nothing further was done with it at that session.

There was still more discussion as to moving THE JOURNAL from Chicago to some place else, and Dr. Garcelon of Maine introduced a resolution calling attention to the fact that the trustees had been authorized to establish a building fund and requesting a ballot of the members of the Association indicating a place where they wished THE JOURNAL to be located permanently.

The Atlanta convention was especially notable for the quality of the entertainment, which included a Georgia barbecue, and for a beautiful address given by John Temple Graves. Typical of his discourse are these paragraphs:

> Atlanta is proud beyond expression of her brilliant galaxy of physicians. We support 200 doctors in this happy town, maintain them in the most lavish splendor and the most indolent leisure. There is nothing here for them to do. In the elixir of this incomparable air and under the blue of these cloudless skies there is never an ailment that an old woman's nostrums wouldn't cure.
>
> Our doctors here are almost without exception millionaires. They practice only on the stranger within our gates. They live in stately mansions, drive in splendid carriages and spend their time in thumping the soundest of "livers" and in feeling the steadiest pulses that ever beat in unison with the hope and progress of the healthiest and bravest city in the South.

He concluded:

> Turn your stethoscopes upon us; level your heartscopes, your brainscopes, try us with the Roentgen rays of all institutions, and you will find that Atlanta, city of conventions, abating no jot or tittle of the sincerity of any past profession, has held in her heart her last and most loving welcome for the doctors of America.

MORE SPECIAL TRAIN TROUBLE

In the same issue in which he reported the minutes of the convention Dr. Hamilton gave a final curtsy to "superintendent Stephens," who had now become Stevens. He opened up with the quotation from Shakespeare:

> But man, proud man,
> Drest in a little brief authority,
> Most ignorant of what he's most assured.
> His glassy essence, like an angry ape,
> Plays such fantastic tricks before high heaven
> As make the angels weep.

Dr. Hamilton repeated the manner in which the physicians had discussed the delay with Mr. Stevens and then he said:

> All these things were explained to the great potentate, but he refused all requests and laughed in our faces, although nearly every male passenger made a personal appeal to him. That his phenomenal brutality should hurt the Queen & Crescent railroad is apparent, and if they are sorry for it they have a plain remedy, that is to repudiate Mr. Stevens, and all his works, at the earliest possible date. It is possible that even the Queen & Crescent railroad may discover that it is not good railroad management to treat a hundred physicians and their families as a trainload of immigrants.

A PERMANENT HOME

Now began the agitation over the permanent home. The trustees had set aside $3,000 to be placed at interest as the commencement of a building fund. All members were sent ballots and requested to vote on the place of the permanent home.

The first page of volume 27 of THE JOURNAL, covering the second half of 1896, reveals the addition to the staff correspondents of several names which were eventually to play highly significant parts in the growth and development of the Association. Among them was that of Emily Cushing, who served for many, many years as an abstracter of literature, and also William Whitford, who was the official reporter until age and illness caused him to discontinue this work after 34 years.

DIPHTHERIA ANTITOXIN INTRODUCED

Diphtheria antitoxin was now exceedingly prominent as the center of interest, and the American Pediatric Society had conducted quite a modern survey as to its usefulness. The evidence was so convincing that a distinguished committee led by L. Emmett Holt gave the remedy their full support and established a routine dosage. "Antitoxin should be administered as early as possible on a clinical diagnosis, not waiting for a bacteriologic culture," they said.

READING NOTICES

By this time a considerable abuse had risen in American medical journalism which again required years for its correction; it was the so-called "reading notice." The manufacturer of proprietary remedies before signing a contract for purchase of space obtained as a concession a number of editorial notices as to the worthiness of his products. The editor of The Journal protested, but apparently the abuse was quite outside his ability to correct.

A STANDARD NOMENCLATURE

On Aug. 8, 1896 the editors called attention to the desirability of a standard nomenclature of diseases—a movement which was only to find real accomplishment over forty years later.

THE PERMANENT LOCATION

At the same time the editor published the result of the ballot on the permanent location of The Journal. Chicago led with 2,128 votes; Washington received 810; New York got only 24, and Philadelphia 48; St. Louis 22 and a good many other cities received just a few votes, including such strange locations as Elmira, N. Y., and Sedalia, Mo.

LEADERS FROM MEDICAL JOURNALISM

Medical journalism at this time occupied a strange place in American medical life. Many of the leaders in American affairs were themselves editors of publications, as, for example, Dr. I. N. Love, who was a trustee of the American Medical Association, Dr. Leartus Connor of Detroit and Dr. Harold N. Moyer, a prominent delegate. Much highly personal journalism resulted from the competition. The repartee in such house organs as Merck's *American Medico-Surgical Bulletin*, Parke, Davis & Company's *Medicine*, the *New York Medical Record*, the *New York Medical Journal* and the *Philadelphia Medical News* with the editor of the Journal of the American Medical Association makes amusing and exciting reading.

MORAL HYGIENE

The hygiene of the period was a moral hygiene more than a scientific medical hygiene. Page after page was devoted to the treatment of inebriety; there were long serial articles published by T. D. Crothers, who conducted an institution for the purpose.

The bicycle was invented about that time and became exceedingly popular. Just as soon at it achieved notice, doctors began to wonder about its medical effects. There were some interesting letters pro and con the bicycle as to what it would do as a cause of vesical and prostatic irritation and how it would react on the reproductive instinct and the sexual appetite of the female. Most of the doctors were convinced however that, regardless of what the bicycle would do to health, the bicycle had come to stay.

THE FIRST EDUCATIONAL NUMBER

The month of September 1896 was highly significant because The Journal of the American Medical Association on September 19 published the first report on the medical colleges of the United States, with a description of the Association of American Medical Colleges and the Southern Medical College Association and their requirements together with a statement concerning each school, its tuition fees, its hours of study and its officers. This was perhaps the first Educational Number. Eventually repeated publication of the facts came to be the most important single step in raising the standards of medical education in the United States. Shortly thereafter The Journal began printing descriptions of diploma mills and to print letters regarding quackery which served to open these successful campaigns.

THE RUSH MONUMENT

The Rush monument project was still doing poorly, and the matter was all the more serious because the homeopaths had raised $75,000 and were in process of building their monument in Washington.

1897

THE SEMICENTENNIAL YEAR; PHILADELPHIA

The editorial pages of The Journal early in 1897 began to reflect other editorial projects of great significance for the advancement of American medicine. One was the defense of animal experimentation, necessary because Senator Gallinger had begun the introduction of a series of appeals which were to follow year after year, designed to prevent the use of animals in the District of Columbia. The Army and Navy medical departments and the U. S. Public Health Service were compelled to oppose such measures in their own interests. The American Medical Association opposed them also because enactment of such legislation in the District might well set a pattern for the rest of the nation.

In 1947 Senator Lemke had succeeded to the Gallinger toga as champion for the antivivisectionists.

HYGIENIC ASPECTS OF SKYSCRAPERS

The Journal discussed learnedly the medical aspects of the modern skyscraper. Some tall buildings were going up; the editor was worried not only about the sanitation of these buildings but also because the buildings were built with steel cores; it seemed that the steel might rust through and the building fall down. The height seemed to offer serious thoughts also in relationship to conflagrations. "Tall buildings," said the editor, "are an experiment and it is too early to say with assurance whether the predictions of those who condemn them may be fully justified."

OSTEOPATHY APPEARS

The osteopaths began to appear prominently in various states seeking recognition in legislation. The firs editorials jeered at their predictions and compared then with Madam Mapp, a famous "bonesetter" or "shap mistress." There had been bonesetters in New Englan as early as 1696. The editor of the *New York Medica*

Record had written an editorial wondering what this new eccentricity of the West meant. To this Dr. Hamilton commented:

> The *Medical Record,* however, should not be too severely criticized for its ignorance of "osteopathy" albeit a female "osteopathist" or "bonesetters" in the days of its editor's youth created a great furor in New York City. The *Medical Record's* knowledge of either medical history or medical science is, it must, charitably be admitted, an unstable quantity. It revived [illegible] II after his encounter with the nihilist by the use [illegible] oxygen sulfate." A medical journal capable of such a chemical extravaganza can hardly be taken seriously on any subject.

By the end of May, however, the editor of The Journal of the American Medical Association began to be disturbed about an osteopathy bill in the state of Illinois, where it had passed the senate.

THE SEMICENTENNIAL MEETING

The really big news of 1897 was the celebration of the semicentennial in Philadelphia. The President was Dr. Nicholas Senn of Chicago, who had already achieved worldwide fame as a surgeon. In his address he recalled the history of the organization. Four members present at the time of its foundation were still alive—Drs. N. S. Davis of Chicago, Alfred Stillé of Philadelphia, J. B. Johnson of St. Louis and D. F. Atwater of Massachusetts. Dr. Senn recalled the progress that had been made in advancing medical education, in the scientific work of the Association, in its improvement of American medical literature and in its development of its own journal. He praised the Code of Ethics and discussed the difficulties which developed when irregular systems of medical practice were introduced in the nation. "The code has fulfilled the purposes for which it was intended and will remain a *noli me tangere* for generations to come," he said. He continued:

> I am sure that this feeling will prevail at the centennial celebration fifty years from now, and that our successors will be grateful to us for handing it down to them in an unmutilated form.

He spoke at some length concerning subscriptions to the fund for the Rush monument and urged the erection of a suitable home for the Association with a hall in which its delegates could meet, a library, a museum and other features. He closed with "a glimpse of the future," which is worthy of repetition now that fifty additional years have passed:

> *A Glimpse of the Future.*—Fifty years of steady growth has made the American Medical Association strong. It has passed the experimental stage; it has done a great deal in advancing and diffusing medical knowledge and in the prevention, alleviation and cure of disease. It is the recognized final tribunal which directs and controls all other medical societies and medical educational institutions. It is the final Court of Appeals to which the regular practitioners and the public can look with confidence for the enforcement of a pure discipline and needed protection. It is the highest postgraduate medical institution in this country which without tuition provides a course of instruction annually of a scientific and practical character, well adapted for the busy practitioner, from which every one returns with a firm determination to do more and better work. It is the great bond of fraternal union which binds and cements together the physicians and surgeons and devotees to special departments of medicine and surgery. The Association has done much for the profession and the people in the past, it can and will do more in the future. The organization is now completed and in excellent working order. We can devote in the future all of our time to scientific and practical work. The increase in membership during the last two or three years is unparalleled in the history of the Association. An awakening interest in the usefulness and prosperity of the Association is noticeable on all sides. The papers read in the sections and the discussions are becoming better from year to year. The fiftieth birthday of the Association will give a new impetus to the work and growth of the Association. It is difficult to foretell the possibilities of the second half of the first century of the existence of the Association. It is, however, safe to predict that when the first centennial celebration will be held in this city fifty years from now the membership will have increased from 9,000 to 75,000 or 100,000, and our official organ at that time will be recognized the world over as the most enterprising and best medical journal. Few, if any, who, constituting my audience today, will live to see that day to bear testimony of the proceedings, festivities and incidents commemorating the first semicentennial. The President who will then occupy this Chair and who probably at this time is laboring with his lessons in arithmetic, spelling, geography and grammar in some public school will then review the work of the Association for the first century, and may we trust from the records we shall leave behind that he may adjudge us faithful servants in the cause of science and humanity. Taking up the thread of history from this day he will chronicle inventions and discoveries of which we have now no conception. The literature of today will be as old and useless as that of fifty years ago. We have the satisfaction of having been permitted to live and labor at a time when the science and practice of medicine and surgery were undergoing a complete revolution. We are now laying the cornerstone and are slowly but surely building the foundation for rational medicine and surgery. The work of the next fifty years will no doubt contribute much toward making what has been sought for ages in vain, the rendering of medicine and surgery exact sciences. The American profession will contribute liberally toward accomplishing this object.
>
> In conclusion, let us implore Almighty God to shower the richest blessings upon the American Medical Association and the labors of all and every one of its present and future members. May it please Him who, during His earthly career, went from place to place as the Great Physician to heal the sick and maimed, through His boundless mercy and tender sympathies for suffering mankind, to so guide our lives and labors as to imitate His inspiring example in relieving suffering and in adding to the happiness of our fellowmen.

The meeting in Philadelphia opened auspiciously with an address of welcome by the mayor and by the Hon. Charles Emory Smith, ex-minister to Russia, who represented the governor of the state. Mr. Smith told the convention that the governor was "detained in Harrisburg in the artistic work of amputating gangrene legislation."

There was a magnificent list of lunches and dinners at which the medical publishers of Philadelphia, the officers of various sections and other distinguished medical organizations were hosts.

After the treasurer of the Rush monument committee made his report, a motion was introduced requesting the American Medical Association to set aside $1,000 each year until a sufficient fund could be raised to build the monument. Dr. J. A. Graham of Colorado made an address pledging the state of Colorado for $2,000, whereupon a roll call of states was made and great numbers pledged anywhere from $2,000 for the state to hundreds of dollars individually. At the end of this great rally Dr. Albert L. Gihon of the U. S. Navy, who had for so many years promoted this fund, thanked the delegates and promised the Association that he would live to see the fulfilment of this work.

The treasurer of the Association made a report indicating a total business of around $56,000 for the year, with $5,000 cash on hand.

Again the question was raised as to the permanent secretary, and Dr. I. N. Love announced that he was not pushing the question. His announcement was greeted with applause. The Association had not yet developed a businesslike method for recording its membership or collecting its dues. There was a tremendous discussion over the fact that the railroad gave half rates to political bodies, synods and Christian Endeavor units but that the best the doctors could get was a fare and a third. In the midst of this discussion it was announced that President William McKinley was about to enter the hall. The proceedings state that:

> A moment or two later President McKinley came in arm in arm with Dr. Senn, who had returned to the rear of the stage to perform the office of escort, immediately after quieting down the Association. Dr. Hare preceded Dr. Senn and President McKinley; Mayor Warwick and Governor Hastings and Dr. Pepper and the others of the party attending President McKinley came after. The Association rose and cheered heartily for a minute or two. Quiet being restored, Dr. Senn presented President McKinley, who addressed the Association.

President McKinley merely conveyed greetings and stated that he had paused to pay respectful homage to the noble profession which those present so worthily represented.

Then a brilliant and witty address was made by Governor Hastings of Pennsylvania. A few quotations follow:

> We have all seen the ideal physician, whose presence in the sick room is as welcome as the morning sunshine; his voice is a benediction, his touch an inspiration and his presence an emblem of security To him children turn, and the marks of pain are changed into the expression of love and confidence. The aged reveal to him the secrets of their lives and their hopes of the life hereafter; mothers forget their vigils of the night in loving anticipation for the restoration of their revered or dear ones, or perhaps in the contemplation of the inevitable that the pathway to the tomb shall be strewn with roses in the confidence of a Redeemer's love.
>
> The development of medicine from a layman's point of view has been greater than that of any other science during the last hundred years. There was left a hiatus for a long period of time, when medicine appeared to be nothing but an empiric art. It is very, very different now. I was speaking to you a moment ago about the erection of statues or monuments to our great philanthropists, great soldiers, etc., and allow me to say that I think it is absolutely wrong and decidedly un-American that we do not erect monuments and statues to the great masters of medical science in this country. Then too I have been puzzled at the number of new diseases you have discovered. I read in a history of the fourteenth century by Horner something about diseases of the skin, in which he said there were three diseases of the skin. One was a disease which could be cured by the use of sulfur, a second disease of the skin could be cured by the use of mercury, and the other was a disease of the skin which the devil himself could not cure.

AGAIN CLEAN ADVERTISING

The Board of Trustees reported that some attempt to regulate the advertisements had resulted in a loss of nearly $4,000 because the advertisers felt that "the continued publication of a formula gives every druggist opportunity to enter into competition with the manufacturer of such specialties." The board put up to the Association its willingness to make some change in the manner and standard of advertising. There had been an increase in the membership of the Association. The board had invested $3,000 in a first mortgage on real estate in the city of Indianapolis. Because neither the Association nor the Board of Trustees was a chartered or legal corporation, the investment had to be made in the name of one of the board as trustee for the Association. Owing to a bank failure the funds of the Association had been placed in peril. This offered difficulties because the Board of Trustees did authorize that a charter should be secured. On motion the report was accepted and the action of the board in securing incorporation was concurred in.

The convention celebrated with jubilee exercises. Dr. N. S. Davis of Chicago, founder of the Association, appeared on the stage escorted by the presidents of the state medical societies and the presidents of the state boards of medical examiners. Dr. John B. Roberts, chairman of the committee on anniversary exercises, presented Dr. Davis, calling attention to the fact that the fifty-two years that had passed since Dr. Davis's first step toward organization of the Association had been followed by the establishment of a higher standard of education and that there were now medical examining boards in nearly every state of the Union as well as state medical societies. President Senn greeted Dr. Davis on behalf of the Association; then Dr. Davis recited again a brief history of the organization, paying tribute to the many distinguished physicians who had participated in its work. Letters were presented from Drs. Atwater of Springfield, Mass., and John B. Johnson of St. Louis, who had been present at the first meeting.

At this session an action was taken offering a gold medal to members for meritorious work, establishing all addresses delivered before the entire Association as orations to distinguish them from the addresses of the chairmen of the sections and establishing an illustrated lecture to be read on the third evening devoted to some medical subject.

THE AUTHORITY OF THE BOARD

As the session ended, a few matters of great importance for the future of the Association were determined. One was a debate with final action on the decision that all actions of the Association requiring appropriation of funds must go to the Board of Trustees. This included even a motion to print 3,000 copies of the articles of incorporation, the Constitution and By-Laws and the Principles of Ethics.

DECISION BY A WITTICISM

Denver was chosen as the place of meeting. It is rather amusing that this decision was made as a result of a witticism. The competing communities were Columbus, Ohio; Tampa, Fla., and Birmingham, Ala. Those who had been urging Columbus prepared a map showing with what ease it could be reached from those centers. The delegate from Denver merely said "You will not need a map to find Denver."

ANIMAL EXPERIMENTATION

A significant address at this session was the statement by W. W. Keen beginning the campaign in which he was enlisted the rest of his life in behalf of experimentation on animals. The Association voted to send a reprint of that address to every Senator and Congressman. Dr. Keen reviewed the progress that had been made in medicine and surgery over fifty years. He credited this progress to the advance of medical teaching with the building of libraries and medical literature, the development of the allied medical sciences, the introduction of anesthesia, the development of antiseptic surgery, the rise of bacteriology and immunology, animal experimentation, and the use of instruments of precision. At one point in his address he said:

> Bacteriology would not now exist as a science, nor would accurate modern surgery and a large part of modern medicine be possible, had experiments upon animals been prohibited, as some zoophilous men and women who love dogs better than men and women, and even little children, desire.

He concluded his address with these paragraphs:

> We have discovered the actual cause of tetanus, tuberculosis, erysipelas, suppuration and a host of other diseases and conditions, of the cause of which we were wholly ignorant a few years ago. The causes of many other disorders, both medical and surgical, still remain hidden from our view. We know almost nothing of the origin of benign tumors and are groping to discover the origin of cancer, sarcoma and other malignant growths. When we have discovered the cause, we are nearly half way, or at least a long way, on the road to the discovery of the cure, and I think it not unlikely that in 1947 your then orator will be able to point to the time when a definite knowledge of the causes of these diseases was attained, and probably to a time when their cure was first instituted.
>
> That will be a surgical paradise when we can lay aside the knife and by means of suitable toxins or antitoxins, drugs or other methods of treatment control inflammation, arrest suppuration, stay the ravages of tuberculosis and syphilis, abort or disperse tumors, cure cancer and, it may be, so prolong human life that all of his then audience will die either of accident or old age. Would that you and I could be alive in 1947 to join in the glorious surgical Te Deum!

As the semicentennial passed, Leartus Connor wrote from Detroit congratulating the Association on a tremendous occasion and predicting that the sections and section work might one day be the chief function of the American Medical Association. He pointed out that the Association has one immense advantage over the special societies in the inexhaustible source of its membership.

Leartus Connor, particularly prominent in the affairs of the American Medical Association, was born in New York, Jan. 29, 1843. After graduation from Williams College in Massachusetts he taught for two years as an assistant principal in Mexico Academy of Mexico, N. Y. He studied under Dr. George L. Dayton and then during 1867-1868 in the medical department of the University of Michigan. From there he went to the College of Physicians and Surgeons in New York City and graduated in 1870. In 1871 he moved to Detroit to become teacher of chemistry in the Detroit Medical College, succeeding eventually to the positions of professor of physiology and clinical medicine and then professor of diseases of the eye and ear. At various times he edited a medical journal known as the *Detroit Review of Medicine and Pharmacy*, the *Detroit Medical Journal*, the *Detroit Lancet* and the *American Lancet*. For seven years he was secretary of the Association of American Medical Colleges. He had also been president of the American Academy of Medicine and of the American Medical Editors Association, chairman of the Section on Ophthalmology of the American Medical Association and vice president in 1882-1883 and a trustee from 1883 to 1889 and again from 1892 to 1894. He was president of the Michigan State Medical Society in 1902-1903 and chairman of its council from 1902 to 1905. He wrote widely in the field of medicine and contributed many biographies to the "Cyclopedia of American Medical Biography." Dr. Connor died on April 16, 1911.

MEDICAL PATENTS

An interesting item in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for Sept. 18, 1897 was an article entitled "Is It Ethical for Medical Men to Patent Medical Inventions?" It consisted largely of an attack on proprietary or "patent" medicines, and its tone in general was opposed to secrecy and patents in the field of medicine. When it was read many physicians arose to agree with the speaker. One of the most remarkable speeches was that of Dr. Squibb, founder of the house of E. R. Squibb & Sons. Dr. Squibb said:

> I do not myself think that anything should be patented by either physician or pharmacist. I am sure that the patient would not be benefited thereby. I may say in regard to "patent" medicines that the medical journals themselves are largely responsible for the existence of this class of remedies. If the journals would cease to distribute their advertisements, the sales would fall off 75 per cent. If editors of journals would use their influence to discourage the publication of such testimonials, it would be of great advantage.

1898

DENVER; THE SPANISH-AMERICAN WAR

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION began 1898 with an increased number of pages, a new press and some new type. The editor proposed particularly an increased amount of space for society proceedings. He called attention to the fact that some of the newest discoveries in medicine appeared in the proceedings of small societies and that it would be for the reader to differentiate between what was important and what was not.

The battle for animal experimentation had begun to enlist many of the great leaders of American medicine. Dr. William H. Welch of Johns Hopkins University contributed a notable essay citing his objections to the Gallinger bill. THE JOURNAL was urging doctors everywhere to reach their Congressmen and Senators with messages condemning this legislation.

Late in March THE JOURNAL appeared with an editorial on some medical questions of a possible war. It discussed the tremendous advances that had been made in military science and wondered whether or not human beings would be able to stand the high explosives and steel ships. "In case of hostilities, the sanitary problems on the island of Cuba will be many and full of interest," said the editor and, perhaps satirically, "The march through Spain from Cordova to Madrid will furnish much of interest to the medical profession." In April 1898 the coming of war in Cuba was the chief topic of interest. The editor of THE JOURNAL expressed little fear because Surgeon General Sternberg knew all about yellow fever and he gave good advice about boiling the water. "There is no question," he said, "but immunity from yellow fever can be secured by the rigid observation of sanitary regulations and prompt isolation of any infected case among the troops that may arise through carelessness or faulty hygiene." When the call for volunteers came, THE JOURNAL urged doctors to give their services. "As the number called out is small compared with the population of the country," said THE JOURNAL, "only well grown and perfectly sound men should be accepted."

RAILROAD RATES

There was great happiness in the profession because the railroads had finally given the doctors the same rates that they gave to members of the Christian

Again the question was raised as to the permanent secretary, and Dr. I. N. Love announced that he was not pushing the question. His announcement was greeted with applause. The Association had not yet developed a businesslike method for recording its membership or collecting its dues. There was a tremendous discussion over the fact that the railroad gave half rates to political bodies, synods and Christian Endeavor units but that the best the doctors could get was a fare and a third. In the midst of this discussion it was announced that President William McKinley was about to enter the hall. The proceedings state that:

> A moment or two later President McKinley came in arm in arm with Dr. Senn, who had returned to the rear of the stage to perform the office of escort, immediately after quieting down the Association. Dr. Hare preceded Dr. Senn and President McKinley; Mayor Warwick and Governor Hastings and Dr. Pepper and the others of the party attending President McKinley came after. The Association rose and cheered heartily for a minute or two. Quiet being restored, Dr. Senn presented President McKinley, who addressed the Association.

President McKinley merely conveyed greetings and stated that he had paused to pay respectful homage to the noble profession which those present so worthily represented.

Then a brilliant and witty address was made by Governor Hastings of Pennsylvania. A few quotations follow:

> We have all seen the ideal physician, whose presence in the sick room is as welcome as the morning sunshine; his voice is a benediction, his touch an inspiration and his presence an emblem of security To him children turn, and the marks of pain are changed into the expression of love and confidence. The aged reveal to him the secrets of their lives and their hopes of the life hereafter; mothers forget their vigils of the night in loving anticipation for the restoration of their revered or dear ones, or perhaps in the contemplation of the inevitable that the pathway to the tomb shall be strewn with roses in the confidence of a Redeemer's love.
>
> The development of medicine from a layman's point of view has been greater than that of any other science during the last hundred years. There was left a hiatus for a long period of time, when medicine appeared to be nothing but an empiric art. It is very, very different now. I was speaking to you a moment ago about the erection of statues or monuments to our great philanthropists, great soldiers, etc., and allow me to say that I think it is absolutely wrong and decidedly un-American that we do not erect monuments and statues to the great masters of medical science in this country. Then too I have been puzzled at the number of new diseases you have discovered. I read in a history of the fourteenth century by Horner something about diseases of the skin, in which he said there were three diseases of the skin. One was a disease which could be cured by the use of sulfur, a second disease of the skin could be cured by the use of mercury, and the other was a disease of the skin which the devil himself could not cure.

AGAIN CLEAN ADVERTISING

The Board of Trustees reported that some attempt to regulate the advertisements had resulted in a loss of nearly $4,000 because the advertisers felt that "the continued publication of a formula gives every druggist opportunity to enter into competition with the manufacturer of such specialties." The board put up to the Association its willingness to make some change in the manner and standard of advertising. There had been an increase in the membership of the Association. The board had invested $3,000 in a first mortgage on real estate in the city of Indianapolis. Because neither the Association nor the Board of Trustees was a chartered or legal corporation, the investment had to be made in the name of one of the board as trustee for the Association. Owing to a bank failure the funds of the Association had been placed in peril. This offered difficulties because the Board of Trustees did authorize that a charter should be secured. On motion the report was accepted and the action of the board in securing incorporation was concurred in.

The convention celebrated with jubilee exercises. Dr. N. S. Davis of Chicago, founder of the Association, appeared on the stage escorted by the presidents of the state medical societies and the presidents of the state boards of medical examiners. Dr. John B. Roberts, chairman of the committee on anniversary exercises, presented Dr. Davis, calling attention to the fact that the fifty-two years that had passed since Dr. Davis's first step toward organization of the Association had been followed by the establishment of a higher standard of education and that there were now medical examining boards in nearly every state of the Union as well as state medical societies. President Senn greeted Dr. Davis on behalf of the Association; then Dr. Davis recited again a brief history of the organization, paying tribute to the many distinguished physicians who had participated in its work. Letters were presented from Drs. Atwater of Springfield, Mass., and John B. Johnson of St. Louis, who had been present at the first meeting.

At this session an action was taken offering a gold medal to members for meritorious work, establishing all addresses delivered before the entire Association as orations to distinguish them from the addresses of the chairmen of the sections and establishing an illustrated lecture to be read on the third evening devoted to some medical subject.

THE AUTHORITY OF THE BOARD

As the session ended, a few matters of great importance for the future of the Association were determined. One was a debate with final action on the decision that all actions of the Association requiring appropriation of funds must go to the Board of Trustees. This included even a motion to print 3,000 copies of the articles of incorporation, the Constitution and By-Laws and the Principles of Ethics.

DECISION BY A WITTICISM

Denver was chosen as the place of meeting. It is rather amusing that this decision was made as a result of a witticism. The competing communities were Columbus, Ohio; Tampa, Fla., and Birmingham, Ala. Those who had been urging Columbus prepared a map showing with what ease it could be reached from those centers. The delegate from Denver merely said "You will not need a map to find Denver."

ANIMAL EXPERIMENTATION

A significant address at this session was the statement by W. W. Keen beginning the campaign in which he was enlisted the rest of his life in behalf of experimentation on animals. The Association voted to send a reprint of that address to every Senator and Congressman. Dr. Keen reviewed the progress that had been made in medicine and surgery over fifty years. He credited this progress to the advance of medical teaching with the building of libraries and medical literature, the development of the allied medical sciences, the introduction of anesthesia, the development of antiseptic surgery, the rise of bacteriology and immunology, animal experimentation, and the use of instruments of precision. At one point in his address he said:

> Bacteriology would not now exist as a science, nor would accurate modern surgery and a large part of modern medicine be possible, had experiments upon animals been prohibited, as some zoophilous men and women who love dogs better than men and women, and even little children, desire.

He concluded his address with these paragraphs:

> We have discovered the actual cause of tetanus, tuberculosis, erysipelas, suppuration and a host of other diseases and conditions, of the cause of which we were wholly ignorant a few years ago. The causes of many other disorders, both medical and surgical, still remain hidden from our view. We know almost nothing of the origin of benign tumors and are groping to discover the origin of cancer, sarcoma and other malignant growths. When we have discovered the cause, we are nearly half way, or at least a long way, on the road to the discovery of the cure, and I think it not unlikely that in 1947 your then orator will be able to point to the time when a definite knowledge of the causes of these diseases was attained, and probably to a time when their cure was first instituted.
>
> That will be a surgical paradise when we can lay aside the knife and by means of suitable toxins or antitoxins, drugs or other methods of treatment control inflammation, arrest suppuration, stay the ravages of tuberculosis and syphilis, abort or disperse tumors, cure cancer and, it may be, so prolong human life that all of his then audience will die either of accident or old age. Would that you and I could be alive in 1947 to join in the glorious surgical Te Deum!

As the semicentennial passed, Leartus Connor wrote from Detroit congratulating the Association on a tremendous occasion and predicting that the sections and section work might one day be the chief function of the American Medical Association. He pointed out that the Association has one immense advantage over the special societies in the inexhaustible source of its membership.

Leartus Connor, particularly prominent in the affairs of the American Medical Association, was born in New York, Jan. 29, 1843. After graduation from Williams College in Massachusetts he taught for two years as an assistant principal in Mexico Academy of Mexico, N. Y. He studied under Dr. George L. Dayton and then during 1867-1868 in the medical department of the University of Michigan. From there he went to the College of Physicians and Surgeons in New York City and graduated in 1870. In 1871 he moved to Detroit to become teacher of chemistry in the Detroit Medical College, succeeding eventually to the positions of professor of physiology and clinical medicine and then professor of diseases of the eye and ear. At various times he edited a medical journal known as the *Detroit Review of Medicine and Pharmacy*, the *Detroit Medical Journal*, the *Detroit Lancet* and the *American Lancet*. For seven years he was secretary of the Association of American Medical Colleges. He had also been president of the American Academy of Medicine and of the American Medical Editors Association, chairman of the Section on Ophthalmology of the American Medical Association and vice president in 1882-1883 and a trustee from 1883 to 1889 and again from 1892 to 1894. He was president of the Michigan State Medical Society in 1902-1903 and chairman of its council from 1902 to 1905. He wrote widely in the field of medicine and contributed many biographies to the "Cyclopedia of American Medical Biography." Dr. Connor died on April 16, 1911.

MEDICAL PATENTS

An interesting item in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for Sept. 18, 1897 was an article entitled "Is It Ethical for Medical Men to Patent Medical Inventions?" It consisted largely of an attack on proprietary or "patent" medicines, and its tone in general was opposed to secrecy and patents in the field of medicine. When it was read many physicians arose to agree with the speaker. One of the most remarkable speeches was that of Dr. Squibb, founder of the house of E. R. Squibb & Sons. Dr. Squibb said:

> I do not myself think that anything should be patented by either physician or pharmacist. I am sure that the patient would not be benefited thereby. I may say in regard to "patent" medicines that the medical journals themselves are largely responsible for the existence of this class of remedies. If the journals would cease to distribute their advertisements, the sales would fall off 75 per cent. If editors of journals would use their influence to discourage the publication of such testimonials, it would be of great advantage.

1898

DENVER; THE SPANISH-AMERICAN WAR

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION began 1898 with an increased number of pages, a new press and some new type. The editor proposed particularly an increased amount of space for society proceedings. He called attention to the fact that some of the newest discoveries in medicine appeared in the proceedings of small societies and that it would be for the reader to differentiate between what was important and what was not.

The battle for animal experimentation had begun to enlist many of the great leaders of American medicine. Dr. William H. Welch of Johns Hopkins University contributed a notable essay citing his objections to the Gallinger bill. THE JOURNAL was urging doctors everywhere to reach their Congressmen and Senators with messages condemning this legislation.

Late in March THE JOURNAL appeared with an editorial on some medical questions of a possible war. It discussed the tremendous advances that had been made in military science and wondered whether or not human beings would be able to stand the high explosives and steel chips. "In case of hostilities, the sanitary problems on the island of Cuba will be many and full of interest," said the editor and, perhaps satirically, "The march through Spain from Cordova to Madrid will furnish much of interest to the medical profession." In April 1898 the coming of war in Cuba was the chief topic of interest. The editor of THE JOURNAL expressed little fear because Surgeon General Sternberg knew all about yellow fever and he gave good advice about boiling the water. "There is no question," he said, "but immunity from yellow fever can be secured by the rigid observation of sanitary regulations and prompt isolation of any infected case among the troops that may arise through carelessness or faulty hygiene." When the call for volunteers came, THE JOURNAL urged doctors to give their services. "As the number called out is small compared with the population of the country," said THE JOURNAL, "only well grown and perfectly sound men should be accepted."

RAILROAD RATES

There was great happiness in the profession because the railroads had finally given the doctors the same rates that they gave to members of the Christian

Endeavor for their conventions. The trip to Denver would cost only one way fare plus $2.

When the Association met in Denver, President Sternberg was unable to be present because his official duties kept him in Washington. His address was read for him by Colonel Woodhull of the U. S. Army. In the address George M. Sternberg discussed the progress of medical science. He encouraged the proposal for the establishment of an organization of defense of medical research. He spoke learnedly about the importance of evaluating negative evidence as well as that favorable to new discoveries. He urged greater attention to the use of the laboratory and greater study of the basic sciences. And he concluded that what had been said "would show that there is no room for creeds and pathies in medicine, any more than in astronomy, geology or botany."

In the June issues of The Journal, Lieut. Col. Nicholas Senn of the National Guard and Illinois Volunteers began his War Correspondence, which was to be a significant feature of The Journal during the Spanish-American War.

Now The Journal began printing weekly comments to the effect that the secretary of the business committee, Dr. Bulkley, had failed to turn in the minutes. The permanent secretary had to share the responsibility. In fact, the editor of The Journal said that it was up to the permanent secretary to see to it that the intense desire of the business committee to conduct the affairs of the Association did not lead its manager to suppress the minutes altogether. Probably the minutes arrived late, because a goodly share of them appeared in the same number in which the editorial complaint is printed.

By this time the technical business of the Association had become so complicated that there began to be complaints that the delegates had no opportunity to attend the scientific meetings. An attempt was made to work out an hourly schedule that would satisfy every one.

Some letters were sent to the editor explaining what had happened to the minutes, and the editor reproved Dr. L. D. Bulkley, telling him that the minutes were the property of the Association and that he had no right to carry them away.

Dr. Richard French Stone of Indianapolis reported that he had worked out a badge for the Association and had it patented so that it would be under the control of the Association. It was an interesting design including a circular spear with a pointed cross. Eventually this design was not adopted.

Dr. William Bailey of Louisville, Ky., offered a resolution to the effect that an active secretary, who could devote his whole time to the work, should be appointed at a salary not exceeding $3,000 a year to work under the present business committee and that the present permanent secretary be retained with the title "honorary secretary." The business committee recommended that his resolution lie over for one year and stated that it would propose changes in the Constitution and By-Laws for the next session. The matter was referred to the Board of Trustees. Out of this came the employment of Dr. George H. Simmons, who was to be the most important force for the next two decades in placing the American Medical Association on the road to financial success and leadership of American medicine.

A motion was passed for the preparation of a membership button.

At the fourth general session there was still more debate over the minutes, which Dr. I. N. Love insisted were not correctly presented. Members insisted that the reporter was incompetent. Dr. Atkinson was bitterly criticized for leaving out portions of the minutes in his reading. Dr. Atkinson became annoyed and said there would be no trouble in keeping the minutes if the doctors would write out their resolutions and turn them in. The end result was an affirmation of the desirability for having a secretary elected annually and for having an accurate report on the minutes day by day.

Another resolution tried to bring about peace with the disaffected medical societies of New York by rescinding all previous actions in relationship to them. Still another resolution proposed to appoint a committee to go over all textbooks in the field of physiology and hygiene in order to make sure of correctness in their statements. Again came the resolution that all officers of the Association be elected for one year. This was laid on the table.

THE BOARD OF TRUSTEES

The report of the Board of Trustees was exceptional in that it was for the first time a complete statement of comparison of the accomplishments of The Journal with other publications. It was now clear that The Journal of the American Medical Association was publishing more material than other medical periodicals in the United States but was not carrying nearly as much advertising as the *Boston Medical and Surgical Journal* or the *New York Medical Journal* and the *New York Medical Record.* It was estimated that the ruling on proprietary medicines was causing The Journal a loss of from $8,000 to $10,000 annually, but was nevertheless successful. The Association had accumulated a great deal of property in the way of machinery and office furniture and it put another $10,000 in the investment fund.

Now Dr. Gihon was able to report that the Rush monument fund had tripled and he now had nearly $12,000.

At this time the Board of Trustees had recommended to the Association that any place that wanted to hold the meeting would have to supply the necessary halls free of expense to the Association.

Practically all resolutions had been referred to the business committee, which rejected the proposal to include anything about the textbooks. The committee put back to the Association as a whole the question of bringing back the New York physicians. Dr. Hobart E. Hare, in an important address, explained the difficulties that prevailed. Dr. X. C. Scott of Cleveland in a reply called attention to the effect that the difficulties with New York involved the Code of Ethics. He was supported by Dr. E. D. Ferguson. There was great heat engendered over this debate with shouts of "No! No!" and "Yes! Yes!" and with cries of "Good! Good!" Dr. W. P. Munn of Denver spoke passionately and concluded "We have all we can do to keep out the dead rot of commercialism and are we going to be trodden down by this derelict, dead, rotten society of New York, which is continually sending" [cries of "No!" mingled with hisses, the final words of the sentence being inaudible]. Dr. Edward Jackson of Philadelphia hoped that the question would be settled once and for all. Then the question was settled by Dr. W. T. Bishop of Harrisburg, Pa., who pointed out that there could be only one state society in any state and there were two in New York and until New York got together there was no chance to settle the question.

DEATH OF DR. JOHN B. HAMILTON

The issue of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION dated Dec. 31, 1898 opened its editorial column with a black border and the words:

> It is our painful duty to record the death of the Editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION on the evening of Dec. 24, 1898 at his residence at Elgin, Ill. The immediate cause of his decease was hemorrhage from a perforation of the intestine, communicating with a large abscess outside the bowel, which terminated life after an illness of less than one month.

The concluding paragraphs tell the story of the terrific work in which he engaged during his later years:

> The leading sanitarian of the country, in all matters of national interest, his advice was sought in every quarter. No medical gathering of national or international importance was complete without his presence. His vigorous form, his genial countenance, radiant with energy and good will, his persuasive voice, were never to be forgotten features in every such assembly. At home his professional duties, his hospital work, his extensive private practice were enough to wear out any ordinary man; but he was ever ready to expend his energies in behalf of any worthy cause that appealed to him for aid. In this way he gave much time and thought to the organization of the new Public Library in Chicago and was most efficient as President of its Board of Trustees. To the surprise of his friends, despite this accumulation of cares, he accepted, in 1896-1897, the position of superintendent of the Northern Illinois Hospital for the Insane, at Elgin, Ill.—an office that heretofore was always considered sufficient to occupy the whole time of an ordinary official incumbent. But the Doctor speedily showed his mettle by a reorganization of the administration that secured improvement in the care of patients, while leaving time for all his other labors—thus illustrating the old observation that among first class administrators the busiest men still have the most leisure.
>
> Now, alas, this career of action has reached its limit. As we look back upon its years we can more fully than ever appreciate its magnitude and its beneficent efficiency. Dr. Hamilton was fortunate in finding full scope for his remarkable power as a founder and organizer of incipient enterprises. He was fortunate also in being permitted to witness the success of his efforts, and he was doubly fortunate in being called to his reward before age or misfortune or any of the ills of life could dim the splendor of his reputation. He has gone, but his works live and will forever exhibit the impress of his constructive power.

1899

COLUMBUS, OHIO

The first volume for the year 1899 contains a title page which indicates that it was edited for the Association under the direction of the Board of Trustees by George H. Simmons, A.M., M.D. This notice was to continue for the next twenty-five years. There are many stories relative to the selection of Dr. George H. Simmons as editor of THE JOURNAL. The report of the Board of Trustees simply says:

> For the last three months of the year the management was greatly embarrassed by the sickness and death of the late editor, Dr. John B. Hamilton. Under his personal supervision THE JOURNAL had increased to nearly three times its original subscription and had gradually obtained a well equipped plant and a large reserve fund but, more than all, a recognized position among tthe reputable journals of the country.
>
> On Jan. 1, 1899, shortly after the announcement of the death of Dr. Hamilton, a called meeting of the Board of Trustees was held, at which it was resolved to continue the conduct of THE JOURNAL business under the direction of the resident trustee, Dr. Truman W. Miller, who had very generously, at the sacrifice of his own interests, assumed the management, on the demise of the editor. At the direction of the Board he had the accounts of THE JOURNAL office and the treasurer examined by an expert accountant, who pronounced them correct. At the annual meeting of the Board, February 17 last, after a careful canvass of the available editorial material, Dr. George H. Simmons of Lincoln, Neb., was chosen editor for one year, at a salary of $5,000, with the stipulation that he should move to Chicago and devote his whole time to the work of THE JOURNAL. Your Board congratulates itself that the wisdom of its selection as editor has been efficiently demonstrated by the subsequent progress of THE JOURNAL. The changes that have been made render it more valuable to its patrons and justify the hope of the Board that it shall become the representative medical journal of the world. Other progressive features are under contemplation. A better grade of white paper will be used in the next volume, and the Board has authorized the purchase of two Mergenthaler linotype machines, at an expense of $6,700, which will insure the use of new type for every issue.

Later in this history a chapter will deal with the details of the life and of the work of Dr. George H. Simmons. According to the best available evidence he was chosen from a considerable group of candidates whose names had been suggested from time to time for the position, including such men as Drs. Bayard Holmes, Harold N. Moyer, Ludvig Hektoen, George M. Gould, G. Frank Lydston and P. Maxwell Foshay. Many of them were interviewed personally by the Board of Trustees. It is understood that Dr. Simmons had the special support of Dr. J. T. Priestly of Iowa and Dr. Joseph Eastman of Indianapolis, who had recognized the merit of his work in the Western Surgical Association.

In 1898 a new weekly Philadelphia medical journal was launched with the financial backing of Musser, Keen, Osler and many others, with George M. Gould as editor. In writing to Musser about that time William Osler said "The J. A. M. A. needs him now more than we do and he could put THE JOURNAL on a first class basis which would be a good thing for the rank and file."

The Board of Trustees discussed the action that had been taken relative to the choice of a full time secretary. It appeared that the minutes of previous action were in such confusion that it was impossible for the Board of Trustees to find their way to a definite conclusion. The Board of Trustees recommended, therefore, an amendment to the Constitution to the effect that the editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION should be the secretary of the Association and should serve as such without additional compensation. It was felt that this would be an economical and efficient procedure, since the secretary would have charge of the manuscripts, which he could then turn over to himself in the position of editor. When the Board of Trustees presented this report, Dr. W. B. Atkinson took exception to the statement concerning the confusion in the minutes. He was answered by Dr. T. J. Happel of Tennessee, member of the Board of Trustees, who stated that the trustees had made careful study but had been unable to find minutes sufficient to indicate exactly what the Association had done in the matter in question. The motion was put and carried. Thus Dr. Simmons on June 7, 1899 was confirmed by the Association as editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and as its secretary.

In the period between the death of Dr. Hamilton in December and the time of the meeting of the Board of Trustees in February 1899 THE JOURNAL was conducted under the direction of the resident secretary of the Board of Trustees, Dr. Truman W. Miller, Chicago.

Dr. Truman W. Miller died in 1900 at the age of 60. He had received his medical education at the College of Physicians and Surgeons of New York and his degree of M.D. from the Geneva Medical College. He served in the Civil War and in 1873 was appointed Assistant Surgeon in the U. S. Marine-Hospital Service. In 1877 he was promoted to Surgeon and resigned in 1886. He had served on the staffs of many of Chicago's prominent hospitals. Known as a man of action not much given to writing or speaking but known for a pertinacity of purpose and executive ability, he originated the Chicago Polyclinic.

Significantly, with the assumption by Dr. Simmons of the position of secretary-editor the list of editorial contributors, assistants and other members of the staff of the headquarters office of the American Medical Association disappeared from the pages of THE JOURNAL. Dr. Simmons assumed management of the headquarters office on March 1. THE JOURNAL proceeded without missing a page or an issue. It is not possible to observe any significant changes in the publication from the period of Hamilton until the issue of March 18, when the editorial columns began to contain a number of small notations on medical affairs, now published under the title of "Current Comment." The popularity of these minor comments is indicated by their continuance since that date. In March a department of medical news was introduced into THE JOURNAL and also a section of questions and answers. In April the department of current medical literature was established, with a listing of the contents of other medical publications and abstracts of significant articles. These features have been continuously in THE JOURNAL since that time.

Two interesting articles appeared in THE JOURNAL in April 1899 and are an indication of the trend of thought of the period. The leading article for April 1 was entitled "Some of the Minor Immoralities of the Tobacco Habit." The hygiene of the period was becoming even more teetotalitarian. Here is a paragraph from this extraordinary scientific contribution:

> The vulgarity and licentiousness of the press, with its mercenary pandering to vice, corrupting as it does that very fountain of national strength, the home; the lubricity, the demoralizing baseness of the degraded drama, disfigurement of hoardings by the cigaret-soaked indecencies of the variety stage, making it difficult for our children to walk the streets without contamination, the growing fondness for certain social functions with their flimsy vaudeville adornments, the mockery of and attempted obliteration of personal puritanism, the crass things done by tobacco-biased young people, degradation of seats of learning by the introduction of smoking-rooms, those hotbeds of vice and agnosticism, of ballet dancing and brainless burlesque —imbecility and irreverence under the auspices of fashion— defilement of public buildings by foul receptacles provided for a people so base that it is necessary to ask them to please not spit on the floor, the Negro minstrel methods of some of our churches, the effeminacy of religious periodicals with their venal advocacy of successful quackery and fraud, the prevalence of the gambling mania among women, leveling all ranks, wasting energy, dissipating time so much needed in more ennobling ways, medieval grotesqueries, euchre and wine parties for the spiritual and physical benefit of the outcast and sick, made so by gambling and drink! what, unless completely engrossed in other things, could induce thoughtful men to silently submit to these, but that undiscriminating drowsiness of conscience—"denying nothing, doubting everything," so frequently induced by tobacco?

Another article in an April issue was by Charles J. Whalen of Illinois and dealt with the doctor as a politician. It was a plea that physicians enter politics in order to secure needed medical reforms and politics was an avocation for Dr. Whalen until the end of his interesting career in medical affairs.

Under Dr. Simmons' editorship THE JOURNAL began to assume more definite form and departmentalization. The interest of the members is shown in many letters published as correspondence to the editor. The space devoted to society proceedings was greatly elaborated, as was also the space devoted to editorials and comments.

In 1899 the publication of the *Index Medicus* was discontinued because of lack of funds. THE JOURNAL, as well as other publications elsewhere in the world, expressed sorrow but it was not for many years that restoration of this publication to its present high estate was attempted.

In the May 27, 1899 issue, for the first time, appeared a well ordered announcement of the next annual session of the American Medical Association in Columbus, Ohio, with a map of the center of Columbus, full information regarding transportation, hotels and other data necessary to those who would attend the meeting. A feature of the issue of June 3, 1899 was a review of the previous presidents of the American Medical Association with photographs of many of them and a list of the meetings and those who presided. This interesting feature was contributed by Nathan Smith Davis.

A supplement to THE JOURNAL recorded progress in surgery for fifty years by Rudolph W. Matas and progress in medicine by John H. Musser, in gynecology by Charles A. L. Reed, in obstetrics by Frank Stahl, in therapeutics by Hobart A. Hare, in physiology by G. N. Stewart, in anatomy by Frank Baker, in pathology by J. Rilus Eastman, in ophthalmology by Casey A. Wood, in otology by T. Melville Hardie, in laryngology by E. Fletcher Ingals and in neurology and psychiatry by a writer whose name for some reason was not given.

There were biographies of the officers of the Association, including the chairman of the Board of Trustees, Dr. Alonzo Garcelon, a complete list of previous members of the Board of Trustees with a group photograph, a brief history of THE JOURNAL and a review of the existing medical periodicals and medical colleges of the country. All this material was included in a special supplement to THE JOURNAL which made it a souvenir number. An editorial reviewed the great progress that had been made in American medicine.

In his president's address Dr. Joseph M. Mathews of Louisville, Ky., made a plea for the removal of the headquarters of the Association to Washington. He thought that it was a mistake to refuse to publish in THE JOURNAL any article read in the Association and that it was up to the readers to select the good from the bad. Dr. Mathews made the suggestion that there be a field secretary to travel about the country and to increase its membership, at the same time soliciting subscriptions to THE JOURNAL. This was to be the most significant of his recommendations. The action favorably taken ultimately on this recommendation led to the most significant steps in reorganization and improvement of membership.

Notwithstanding the tremendous enthusiasm and the numerous contributions that had been made at the 1897 meeting held in Philadelphia, the Rush monument fund had reached only $10,082.52. Dr. Albert L. Gihon announced that he was leaving for an indefinite residency abroad and resigned as leader for this fund.

The Association had up to this time reached an annual budget of a little over $83,000, and it had more than $18,000 in the treasury.

The Association was urging the employment of women nurses in military hospitals. It urged increased rank for the Surgeon General of the Army, support for the *Index Medicus*, and the creation of a national department of public health with a cabinet minister.

A committee was appointed to revise the Constitution and By-Laws. On recommendation of the executive committee the Association voted not to hold its meetings permanently in Washington and that it avoid too many entertainments. The recommendation for a traveling assistant secretary was referred to the Board of Trustees. Actions were taken to make a special review of tuberculosis and urged the development of sanatoriums and to urge compulsory vaccination against smallpox. A motion had been introduced that there be published a list of members of the Association. This was opposed on the ground that this list would be used by the proprietary drug houses for commercial purposes. Dr. Simmons rose for the first time in the House of Delegates and defended the publication of the list on the grounds that he could sell it for $25 a copy. However, the entire consideration was finally laid on the table.

THE SCIENTIFIC EXHIBIT

Among the most significant and important developments for the advancement of medical science has been the Scientific Exhibit. Today it occupies many thousands of square feet of space and has been characterized as the most valuable effort in behalf of graduate medical education attempted by any organization anywhere in the world. It started with small and simple beginnings. At the meeting of the American Medical Association in 1899 a resolution was introduced by Dr. Charles E. Slocum of Defiance, Ohio, in which he said "that this Association hereby commends the efforts of the Indiana State Medical Society in preserving pathologic specimens and exhibiting the same at this meeting. This exhibit is worthy the attention of every member, being a good example of what careful and persistent attention to pathology may accomplish in a short time when well directed. Such efforts are recommended to all societies as conducive to more careful and methodic diagnosis of treatment." On motion this resolution was adopted.

THE JOURNAL INDEX

The quality of the index to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION notably improved with the second half of 1899 and has come to be recognized as one of the most important general indexes in the field of medicine. With the complete coverage of medical science represented by THE JOURNAL, this index is for most workers in the field of medical biography the first line of attack.

DR. BILLINGS BECOMES ACTIVE

Dr. Frank Billings was chairman of the Section on Medicine in 1899. There were eighty-three papers, and he had succeeded in securing fifty-four abstracts. He made the suggestion that a rule be adopted requiring every member who desires to prepare and present a paper at any future meeting to prepare and send to the officer of the section a short synopsis of the paper to be printed in advance of the meeting. He urged that, if possible, the papers should concern original research, but he recognized the value of full reports of cases when possible supported by thorough postmortem examinations.

NEW PROGRESS THROUGH THE JOURNAL

The differences and disagreements in American medicine were being harmoniously resolved. The quality of THE JOURNAL began to improve. Membership was increasing, as were subscriptions to THE JOURNAL. Dr. Hamilton had been a competent editor, but the quality of the new leadership was clearly apparent. Following leadership by the Chicago *Tribune*, THE JOURNAL began a campaign against Fourth of July accidents, initiating its campaign with an editorial which was to be followed some years later by a careful survey of deaths and accidents as seen by physicians and hospitals throughout the nation.

The enterprise of THE JOURNAL was indicated by publication of the proceedings of the Canadian Medical Association on the same day on which the meeting occurred and distributing it among the Canadian members. The button for the Association was developed following the design originally worked out by Dr. Richard French Stone. This design was later to be discarded for the one now followed.

During the year an attempt was made in Germany to produce an Index Medicus under the name of "Index Medicus Novus." It proved to be a weak effort and quite incapable of replacing the *Index Medicus* that had been developed by John Shaw Billings and Robert Fletcher.

THE SCIENTIFIC EXHIBIT

Gradually new departments such as clinical reports and therapeutic notes were added to THE JOURNAL. In THE JOURNAL for Dec. 2, 1899, Dr. Frank B. Wynn of Indianapolis wrote to the editor about the Scientific Exhibit. In 1897 an appeal had been made to members of the Indiana State Medical Society for pathologic specimens, and at each annual meeting since that date such specimens have been exhibited, reaching 800 in 1899. The exhibit had attracted so much attention in Indiana that the state society appropriated $300 to take the exhibit to the Columbus meeting of the American Medical Association. Dr. Wynn urged a similar exhibit for each meeting of the American Medical Association and together with such an exhibit the establishment of a section on pathology. He felt that there should be a similar exhibit every year and, he concluded, "in seeking to inaugurate a pathologic museum, the executive officers of the American Medical Association should receive the enthusiastic support of every member of the organization. Start the movement at once! Have an exhibit at Atlantic City next year, even if it is a small one! Let us have a wholesome direction from the selfish commercial exhibits! In conclusion, let me say that Indiana, as the pioneer in this field, stands ready to meet the requirement put on her by the national body."

And still THE JOURNAL improved, with special headings of news and center headings of London, Philadelphia and New York, with improved pictures sometimes occupying full pages. A department of New Instruments was added. The prominence of the consideration given to new discoveries and new activities indicated a journalistic quality in the editor that was in advance of his time.

(To be continued)

Clinical Notes, Suggestions and New Instruments

UNILATERAL FRONTAL HYPERHIDROSIS RELIEVED BY SUPRAORBITAL NERVE SECTION

J. M. TAYLOR, M.D.
and
ERNST HERZ, M.D.
New York

Disturbances of sweating in areas supplied by peripheral nerves have been described in association with lesions of these nerves and always in the presence of abnormalities of sensory or motor functions. There have been numerous observations[1] *of either hyperhidrosis or anhidrosis in cases of traumatic lesions of peripheral nerves. However, the occurrence of hyperhidrosis in the zone of supply of a peripheral nerve in the absence of any accompanying abnormality of function has not hitherto been recorded, to our knowledge. Further justification for this report is the fact that the patient was relieved of her complaint by division of the nerve supplying the affected area.*

The patient was a rather tense woman, 30 years of age, the mother of three children, aged 8, 4 and 1½ years. General physical as well as neurologic examinations did not reveal any abnormality except for a disturbance of sweating over the left side of the forehead. The exact outline of this area was determined by measuring the electrical skin resistance with a Dermohmeter on the day of the operation, when droplets of sweat covered the left side of the forehead. The area of decreased electrical skin resistance (fig. 1) corresponded closely with the zone of increased sweating (fig. 2). This zone represents the cutaneous area supplied by the supraorbital nerve with respect to both its sensory and also its sudomotor innervation as determined by the Minor starch method (fig. 3).

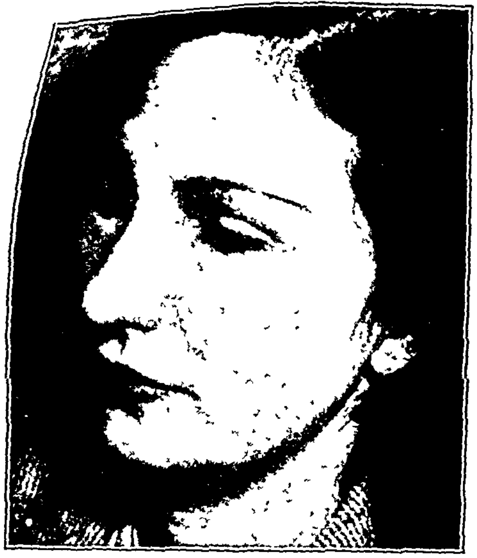


Fig. 2.—Increased sweating on left side of the forehead.

Section of the supraorbital nerve was therefore recommended and readily accepted by the patient, who was severely embarrassed by her complaint. On March 14, 1946 under local procaine hydrochloride anesthesia the left supraorbital nerve persistent sweating which occurs over a small zone covering the area of a five cent piece just above and medial to the inner border of the eyebrow. This hyperhidrosis occurs under the same circumstances now as before the operation, but it is slight and does not cause the patient embarrassment.

Examination of the electrical skin resistance on June 11, 1946 revealed an area of increased resistance with complete loss of sensation and a remaining small zone of decreased resistance without sensory disturbance (fig. 3). At the time of the last examination (July 17, 1946) the area of decreased resistance had vanished, and there was only hypesthesia in the former area.

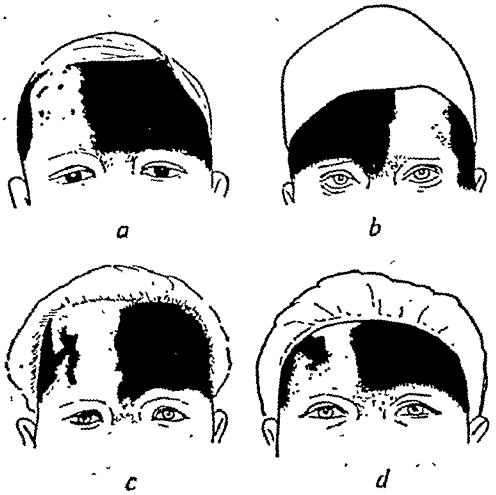


Fig. 4.—Disturbance of sweat secretion in lesions of the supraorbital nerve (after L. Guttman); investigated by Minor's iodine starch method.

COMMENT

The result of the operation, which consisted solely of resection of the supraorbital nerve with preservation of the adjacent artery, confirms the conclusions of List and Peet[2] with reference to the course of the sweat fibers to the forehead (fig. 5).

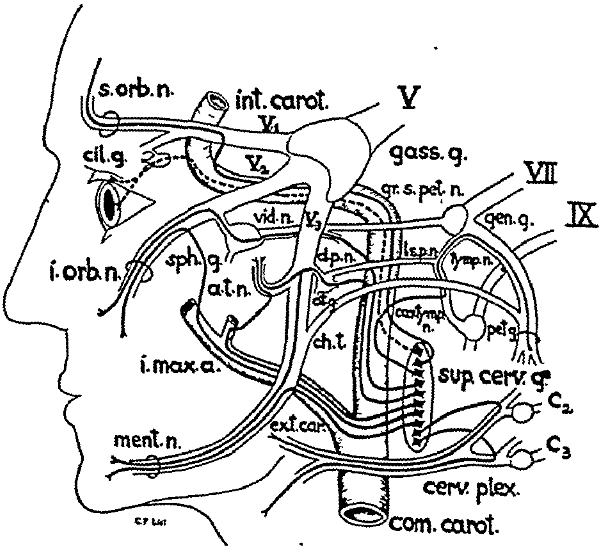


Fig. 5.—Schematic drawing illustrating the probable course of the sympathetic sweat fibers for the face (after List and Peet).

The autonomic fibers from the superior cervical ganglion finally join the branches of the trigeminal nerve shortly before their points of exit through the skull. After section of the supraorbital nerve the interruption of sweating and sensory function in the corresponding area was complete. Sensation was partly restored four months after the operation. With regard to the persistence of sweating and the associated decrease in the electrical skin resistance in the small area shown in figure 3, it is possible that a small branch of the supraorbital nerve supplying this region was not severed at operation.

An apparent reason for the spontaneous occurrence of hyperhidrosis in the area of the supraorbital nerve could not be found. The patient never experienced pain, and a history of trauma to the nerve or of any infectious process in the region of it was lacking. The etiology and pathogenesis of the condition remain unknown. However, one might assume the presence of an irritative process affecting solely the autonomic fibers of a sensory nerve. Further investigation of electrical skin resistance in cases of neuralgia and circumscribed cutaneous conditions may reveal comparable abnormalities of autonomic innervation.

SUMMARY

A case of circumscribed hyperhidrosis over the left side of the forehead is described. After section of the supraorbital nerve the hyperhidrosis was abolished almost completely. The area of disturbed sweating was clearly outlined by measurement of the electrical skin resistance. The result of the operation confirms the conclusion of List and Peet on the course of sweat fibers to the forehead.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

DIETHYLSTILBESTROL (See New and Nonofficial Remedies, 1946, p. 436).

The following dosage forms have been accepted:

THE HARROWER LABORATORY, INC., GLENDALE, CALIF.

Diethylstilbestrol (in Peanut oil): 1.0 mg. per cc.: 1 cc. ampuls, and 5.0 mg. per cc.: 10 cc. vials, preserved with 0.5 per cent chlorobutanol.

E. S. MILLER LABORATORIES, INC., LOS ANGELES

Tablets Diethylstilbestrol: 0.1 mg., 0.5 mg. and 1.0 mg.

PREMO PHARMACEUTICAL LABORATORIES, INC., NEW YORK

Diethylstilbestrol (in Peanut oil): 0.5 mg. per cc., 1.0 mg. per cc. and 5.0 mg. per cc.: 1 cc. ampuls.

Vaginal Suppositories Diethylstilbestrol: 0.1 mg. and 0.5 mg. Tablets Diethylstilbestrol: 0.1 mg., 0.5 mg., 1.0 mg. and 5.0 mg.

THE VALE CHEMICAL CO., INC., ALLENTOWN, PA.

Tablets Diethylstilbestrol: 0.1 mg., 0.5 mg. and 1.0 mg.

PENICILLIN IN OIL AND WAX (See THE JOURNAL, Sept. 7, 1946, p. 23).

The following dosage forms have been accepted:

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Penicillin (Calcium) in Oil and Wax: 300,000 units per cubic centimeter in B-D[1] 1 cc. glass cartridge with B-D Disposable Cartridge Syringe; and in B-D 1 cc. cartridge, with flushing fluid (benzyl alcohol 1.5 per cent in isotonic solution of sodium chloride), for use in B-D Cartridge Syringe. Calcium penicillin suspended in peanut oil containing 4.8 per cent (W/V) white wax, U. S. P.

THE WM. S. MERRELL CO., CINCINNATI

Penicillin (Calcium) in Oil and Wax: 300,000 units per cubic centimeter, 10 cc. vials. Calcium penicillin suspended in peanut oil containing 4.8 per cent white wax, U. S. P.

WYETH INCORPORATED, PHILADELPHIA

Tubex Penicillin (Calcium) in Oil and Wax: 300,000 units per cubic centimeter. Penicillin calcium suspended in peanut oil containing 4.8 per cent yellow wax, U. S. P.

---

[2] List, C. F., and Peet, M. M.: Sweat Secretion on the Face and Its Disturbances, Arch. Neurol. & Psychiat. 40:443 (Sept.) 1938.

[1] Trademark registered, Becton, Dickinson & Co.

Clinical Notes, Suggestions and New Instruments

UNILATERAL FRONTAL HYPERHIDROSIS RELIEVED BY SUPRAORBITAL NERVE SECTION

I. M TARLOV, M D
and
ERNST HERZ, M D.
New York

Disturbances of sweating in areas supplied by peripheral nerves have been described in association with lesions of these nerves but always in the presence of abnormalities of sensory or motor functions There have been numerous observations[1] of either hyperhidrosis or anhidrosis in cases of traumatic lesions of peripheral nerves. However, the occurrence of hyperhidrosis in the zone of supply of a peripheral nerve in the absence of any accompanying abnormality of function has not hitherto been recorded, to our knowledge. Further justification for this report is the fact that the patient was relieved *of her complaint by division of the nerve supplying the affected* area.

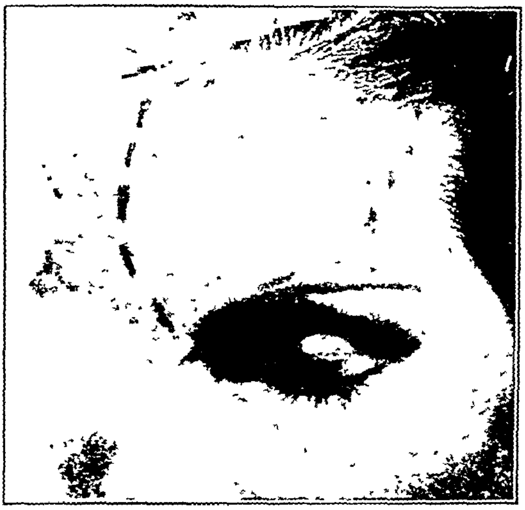


Fig 1 —Area of decreased electrical skin resistance before operation.

REPORT OF CASE

Mrs E M, aged 30, referred by Dr Grace Gorham of Norwalk, Conn, suffered from paroxysms of sweating over the left side of the forehead Her family and past histories were noncontributory except that she and three other members of her family have always been "rather nervous" At the age of 16 years she noticed attacks of sweating "along the inner side of my left eyebrow" Gradually in the course of the next few years the area of perspiration spread to involve the entire left side of her forehead. The disturbance was precipitated by unpleasant thoughts or excitement. "Just reading a murder mystery would bring it on; any sort of emotion, even joy, would cause it. Visiting friends or going out to dinner or playing bridge was most embarrassing to me, because I would have to hold a handkerchief in my hand and keep constantly mopping my brow. It got so bad that I dreaded going out socially. On damp days I noticed that the perspiration might keep coming all day long. It was always on the left side of my forehead Sometimes being in a draft would start the sweating."

The patient was a rather tense woman, 30 years of age, the mother of three children, aged 8, 4 and 1½ years. General physical as well as neurologic examinations did not reveal any abnormality except for a disturbance of sweating over the *left side of the forehead* The exact outline of this area was determined by measuring the electrical skin resistance with a Dermohmeter on the day of the operation, when droplets of sweat covered the left side of the forehead. The area of decreased electrical skin resistance (fig. 1) corresponded closely with the zone of increased sweating (fig. 2). This zone represents the cutaneous area supplied by the supraorbital nerve *with* respect to both its sensory and also its sudomotor innervation as determined by the Minor starch method (fig. 3).

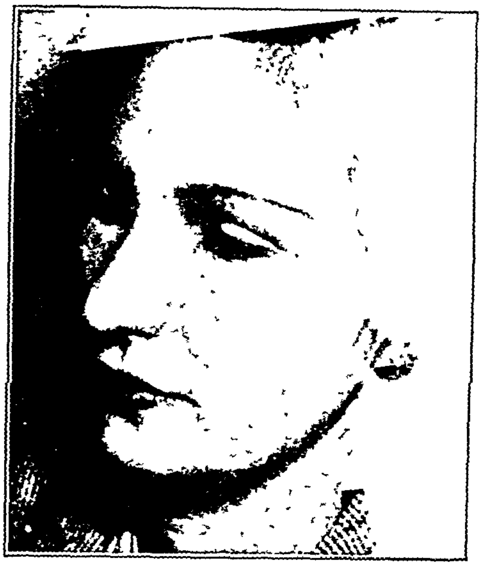


Fig 2 —Increased sweating on left side of the forehead

Section of the supraorbital nerve was therefore recommended and readily accepted by the patient, who was severely embarrassed by her complaint On March 14, 1946 under local procaine hydrochloride anesthesia the left supraorbital nerve was exposed and separated from the artery, and a section of the nerve about 1 cm long was excised The artery remained undamaged. The wound was closed with silk sutures, which were removed on the fourth postoperative day. Healing of the wound was prompt. Since the operation the patient has been relieved of her paroxysms of perspiration, except for slight

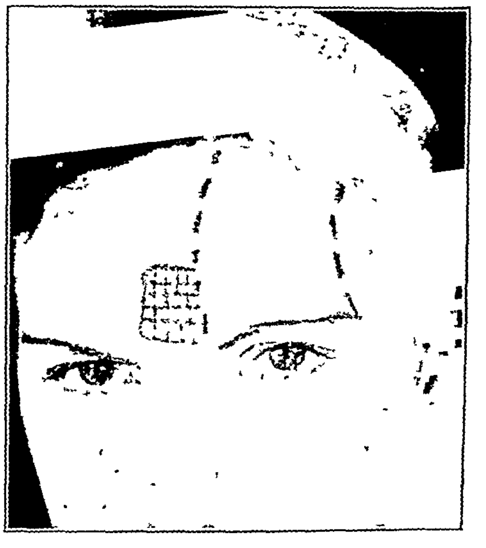


Fig 3 —Area of anesthesia and increased electrical skin resistance and small (cross hatched) area of remaining increased skin resistance after operation

---

From the Department of Neurosurgery, New York Medical College, and the Department of Neurology, Columbia University College of Physicians and Surgeons and the Neurological Institute of New York.

[1] Richter, C. P, and Katz, D. T.: Peripheral Nerve Injuries Determined by the Electrical Skin Resistance Method, J A M. A. 122:643 (July 3) 1943. Jasper, H., and Robb, P.: Studies of Electrical Skin Resistance in Peripheral Nerve Lesions, J. Neurosurg 2:261 (July) 1945. Herz, E; Glaser, G H; Moldaver, J, and Hoen, T. I.: The Electrical Skin Resistance Test in the Evaluation of Peripheral Nerve Injuries, *Arch. Neurol & Psychiat.* 56:365 (Oct) 1946

persistent sweating which occurs over a small zone covering the area of a five cent piece just above and medial to the inner border of the eyebrow. This hyperhidrosis occurs under the same circumstances now as before the operation, but it is slight and does not cause the patient embarrassment.

Examination of the electrical skin resistance on June 11, 1946 revealed an area of increased resistance with complete loss of sensation and a remaining small zone of decreased resistance without sensory disturbance (fig. 3). At the time of the last examination (July 17, 1946) the area of decreased resistance had vanished, and there was only hypesthesia in the former area.

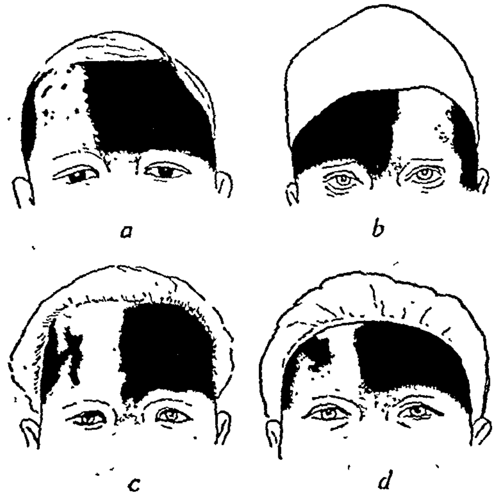


Fig. 4.—Disturbance of sweat secretion in lesions of the supraorbital nerve (after L. Guttman); investigated by Minor's iodine starch method.

COMMENT

The result of the operation, which consisted solely of resection of the supraorbital nerve with preservation of the adjacent artery, confirms the conclusions of List and Peet[2] with reference to the course of the sweat fibers to the forehead (fig. 5). The autonomic fibers from the superior cervical ganglion finally join the branches of the trigeminal nerve shortly before their points of exit through the skull. After section of the supraorbital nerve the interruption of sweating and sensory function in the corresponding area was complete. Sensation was partly restored four months after the operation. With regard to the persistence of sweating and the associated decrease in the electrical skin resistance in the small area shown in figure 3, it is possible that a small branch of the supraorbital nerve supplying this region was not severed at operation.

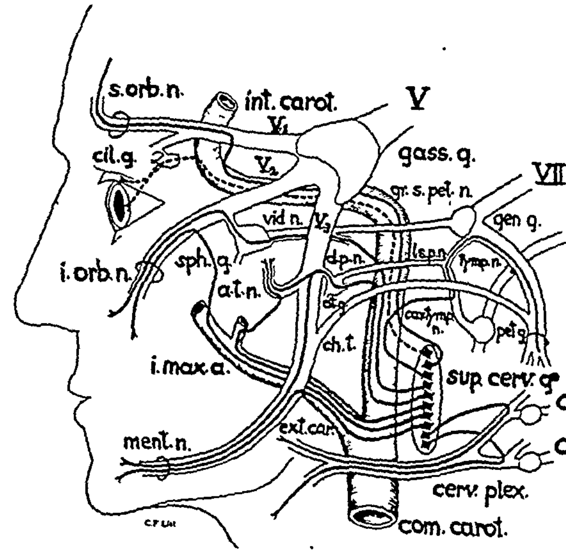


Fig. 5.—Schematic drawing illustrating the probable course of the sympathetic sweat fibers for the face (after List and Peet).

An apparent reason for the spontaneous occurrence of hyperhidrosis in the area of the supraorbital nerve could not be found. The patient never experienced pain, and a history of trauma to the nerve or of any infectious process in the region of it was lacking. The etiology and pathogenesis of the condition remain unknown. However, one might assume the presence of an irritative process affecting solely the autonomic fibers of a sensory nerve. Further investigation of electrical skin resistance in cases of neuralgia and circumscribed cutaneous conditions may reveal comparable abnormalities of autonomic innervation.

SUMMARY

A case of circumscribed hyperhidrosis over the left side of the forehead is described. After section of the supraorbital nerve the hyperhidrosis was abolished almost completely. The area of disturbed sweating was clearly outlined by measurement of the electrical skin resistance. The result of the operation confirms the conclusion of List and Peet on the course of sweat fibers to the forehead.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

DIETHYLSTILBESTROL (See New and Nonofficial Remedies, 1946, p. 436).

The following dosage forms have been accepted:

The Harrower Laboratory, Inc., Glendale, Calif.

Diethylstilbestrol (in Peanut oil): 1.0 mg. per cc.: 1 cc. ampuls, and 5.0 mg. per cc.: 10 cc. vials, preserved with 0.5 per cent chlorobutanol.

E. S. Miller Laboratories, Inc., Los Angeles

Tablets Diethylstilbestrol: 0.1 mg., 0.5 mg and 1.0 mg.

Premo Pharmaceutical Laboratories, Inc., New York

Diethylstilbestrol (in Peanut oil): 0.5 mg. per cc, 1.0 mg. per cc. and 5.0 mg. per cc.: 1 cc. ampuls.

Vaginal Suppositories Diethylstilbestrol: 0.1 mg. and 0.5 mg. Tablets Diethylstilbestrol: 0.1 mg., 0.5 mg., 1.0 mg. and 5.0 mg.

The Vale Chemical Co., Inc., Allentown, Pa.

Tablets Diethylstilbestrol: 0.1 mg., 0.5 mg. and 1.0 mg.

PENICILLIN IN OIL AND WAX (See The Journal, Sept. 7, 1946, p. 23).

The following dosage forms have been accepted:

Abbott Laboratories, North Chicago, Ill.

Penicillin (Calcium) in Oil and Wax: 300,000 units per cubic centimeter in B-D[1] 1 cc. glass cartridge with B-D Disposable Cartridge Syringe; and in B-D 1 cc. cartridge, with flushing fluid (benzyl alcohol 1.5 per cent in isotonic solution of sodium chloride), for use in B-D Cartridge Syringe. Calcium penicillin suspended in peanut oil containing 4.8 per cent (W/V) white wax, U. S. P.

The Wm. S. Merrell Co., Cincinnati

Penicillin (Calcium) in Oil and Wax: 300,000 units per cubic centimeter, 10 cc. vials. Calcium penicillin suspended in peanut oil containing 4.8 per cent white wax, U. S. P.

Wyeth Incorporated, Philadelphia

Tubex Penicillin (Calcium) in Oil and Wax: 300,000 units per cubic centimeter. Penicillin calcium suspended in peanut oil containing 4.8 per cent yellow wax, U. S. P.

---

[2] List, C. F., and Peet, M. M.: Sweat Secretion on the Face and Its Disturbances, Arch. Neurol. & Psychiat. **40**: 443 (Sept.) 1938.

[1] Trademark registered, Becton, Dickinson & Co.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - Chicago 10, Ill.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - : *Eight dollars per annum in advance*

Please send in promptly notice of change of address, giving both old and new, always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, FEBRUARY 15, 1947

BACKGROUND TO CHEMOTHERAPY

In a recent issue the British Medical Bulletin[1] publishes, under the heading of "Background to Chemotherapy," a series of articles dealing with the historical and theoretic aspects of chemotherapy. E. M. Lourie believes that the term chemotherapy should be restricted in its meaning to the intention of its originator, Paul Ehrlich, applying only to the treatment of infections by chemical compounds. The aim of the investigator in chemotherapy, according to Schulemann, is to reach the parasite cells and to throw their function so irreversibly out of order that the parasite dies but the host remains as unharmed as possible. Ehrlich's greatest practical achievement was the introduction of arsphenamine (salvarsan) in 1910.

In 1935 Domagk announced p-sulfonamido-chrysoidin (prontosil) as an effective agent against infections with hemolytic streptococci, and Tréfouël, Tréfouël, Bovet and Nitti of the Institute Pasteur demonstrated that the part of the prontosil molecule which conferred staining properties was not essential to its therapeutic powers; these were equally efficient if the substance were abbreviated to p-amino-benzenesulfonamide (commonly known as sulfanilamide). These important contributions of the French workers to the subject of chemotherapy have not received sufficient recognition in relevant literature. The action of sulfanilamide and its successors was found to be mainly directed against hemolytic streptococci, Escherichia coli, meningococci and, to a less extent, gonococci. With the use of sulfapyridine pneumococci also were acted against, and with sulfathiazole and sulfadiazine the range of action widened still further to include that against staphylococci, though the latter are not as susceptible to any sulfonamide compound as they are to penicillin.

Sir Howard Florey points out that although the use of the word "antibiotic" to mean the actual chemical substances involved in bacterial antagonisms was only recently introduced by Waksman and his co-workers, the recognition of antagonisms between bacteria dates to an observation made by Pasteur and Joubert as early as 1877. They observed that if a culture of anthrax bacilli in urine was contaminated by organisms from the air, the anthrax bacilli were destroyed. By 1889, according to Florey, the phenomenon of bacterial antagonisms was well known and nearly all bacteriologists who worked on it at that time had in mind its use for therapeutic purposes. The first example of a mold yielding an antibiotic was recorded in 1896 by Gosio, when he obtained a crystalline substance from a penicillium in the course of his investigations on moldy maize. Although a large number of observations on antibiotics had been recorded from 1877 on, the observation which has had the greatest consequence was made in 1929, when Fleming noticed a mold which had accidentally contaminated one of his culture plates and which was causing the dissolution of staphylococci in its neighborhood. Chain, Florey and their co-workers at Oxford demonstrated that penicillin was a chemotherapeutic drug of great power, that is to say, it was of such low toxicity that it could, without producing any toxic signs, be injected by parenteral routes in amounts which would stop the growth of bacteria in all parts of the body. Results of clinical trial with penicillin were made known in 1943 by Florey and Florey. Two facts of special importance which emerged from the laboratory work at Oxford were (1) that extracted penicillin was fully active in the presence of pus and tissue-breakdown products and of large numbers of bacteria, all of which impaired the antibacterial action of all the sulfonamide drugs known at that time and (2) that even impure extracts were nontoxic to animals in concentrations hundreds of times greater than those required to inhibit the growth of bacteria and that with increased purity of extracts the toxicity became still less.

Among several antibiotic substances extracted by Waksman and his co-workers at Rutgers from the actinomycetes, one known as streptomycin has proved to be particularly valuable. It has little toxicity to animal tissues, and it stops the growth of many pathogenic organisms at high dilution and is active against some of the organisms not inhibited by penicillin. It has some effect against Mycobacterium tuberculosis. Its possible use for the treatment of tuberculosis is now being investigated. McIlwain in a contribution on "Analysis of Antibacterial Action" stresses that the first characteristic in the sulfonamide compounds to be connected with the differing abilities of the drugs to inhibit bacteria is the interacting ratios of the concentrations of the drugs and para-aminobenzoic acid. The second characteristic so correlated is the acidic-dissociation constant of the drugs As to the bacterial systems through which any one agent becomes effective and the organization of living systems in general, it appears that the "receptors" of earlier investigators are now usually regarded as enzyme systems.

---

[1] British Medical Bulletin 40: (no. 4) 1946.

The symposium contains an interesting contribution on the Nutrition of Bacteria by Sir Paul Fildes, on the Microbial Resistance to Chemotherapeutic Drugs by F. R. Selbie, on the Principles and Practice of Local Chemotherapy by L. P. Garrod and several other valuable papers on related subjects.

ARTIFICIAL TERMINATION OF PREGNANCY FOR ERYTHROBLASTOSIS FETALIS

The routine testing of pregnant women for the Rh factor and the search for antibodies in the serums of those Rh negative patients who have Rh positive husbands is resulting in the detection of literally hundreds of women who show sensitization prior to delivery. Most, of course, are multiparas, of whom some have previously given birth to a child affected by hemolytic disease of the newborn. Some are primigravidous women with or without a history of transfusion or abortion. In every case the question arises Shall this patient be allowed to await spontaneous labor at term, or shall the baby be delivered prematurely, by the induction of labor or by cesarean section? If labor is induced and results in a premature child without evidence of erythroblastosis, the physician wonders whether his intervention was justified. If a cesarean section is performed early and results in the birth of a child with hydrops fetalis, which dies a few minutes or hours later, then the physician knows that his operative intervention was not justified. Such results, occurring with increasing frequency, have led many, if not most, obstetricians to abandon the interruption of pregnancy in these cases. The dilemma is clearly due to the inability of the obstetrician to predict the outcome with any degree of accuracy.

In a recent report Page, Hunt and Lucia[1] indicated that the time at which appreciable amounts of either agglutinating or blocking antibodies appear during pregnancy is directly related to the fetal prognosis. By obtaining the first serum sample not later than the twenty-fourth week of pregnancy and assuming that the antibodies appeared halfway between the time of the last negative sample and the first positive one, the "appearance time" was dated in 49 cases. When only "traces" of antibodies could be detected, or isolated small amounts of anti-Rh or blocking antibodies were noted once but never confirmed, there were no instances of frank erythroblastosis, and all the babies survived. This would indicate that such traces or isolated small amounts may usually be ignored, regardless of when they appear during pregnancy. In the remaining cases appreciable amounts of either agglutinating or blocking antibodies were found and confirmed on examination of subsequent monthly samples. When the "appearance time" was less than ten weeks ante partum, all the infants were normal. When the antibodies appeared from ten to fourteen weeks before delivery 7 of 10 babies showed evidence of hemolytic disease; and while 3 of them succumbed, there were no instances of hydrops fetalis, the most severe form of erythroblastosis. Of the 12 cases in which the antibodies had existed for more than fourteen weeks, there were only 2 infants with erythroblastosis who survived and there were 7 cases of fatal hydrops fetalis. The exposure to persistent and appreciable amounts of either type of antibody for more than nine weeks in 22 mothers resulted in only 5 normal infants, 4 of whom were readily explained by the fact that they were Rh negative, the pregnancy probably having produced an anamnestic recall of previously existing antibodies.

From these preliminary data Page and his co-workers conclude that the artificial termination of pregnancy is probably unnecessary when Rh antibodies first appear less than ten weeks from term and probably useless when they appear more than fifteen weeks from the time selected for induction of labor. "The termination of pregnancy," they state, "by conservative means and the prompt transfusion of an anemic child at birth should result in a higher survival of infants only in that small group of mothers wherein antibodies appear for the first time ten to sixteen weeks before the estimated date of confinement. Beyond that period any attempt to reduce the exposure to ten weeks or less would probably result in the loss of the child from prematurity or from a combination of prematurity and erythroblastosis."

THE TAFT-SMITH-BALL-DONNELL MEDICAL CARE BILL

A revision of the Taft-Smith-Ball bill introduced this week is, in its general framework, similar to its predecessor. Senator Donnell has joined as a sponsor and two significant revisions are made.

In the original bill the Administrator of the National Health Agency was to be either a doctor of medicine with at least eight years of experience in the commissioned corps of the United States Public Health Service or a doctor of medicine licensed to practice medicine in one or more of the states, with at least five years of active practice and three years of experience in a responsible position in medical research, teaching or administration. The new bill will provide that the administrator must be a "doctor of medicine licensed to practice in one or more of the states and who is outstanding in the field of medicine."

Again, in the bill introduced in the Seventy-Ninth Congress, the United States Public Health Service, acting through the Surgeon General, was designated as the administrative agency on the federal level in relation to state programs to provide medical and hospital care for families and individuals of low income. This will be changed and there will be established in the pro-

---

[1] Page, E. W.: Hunt, M., and Lucia, S. P.: The Antepartum Prediction of Hemolytic Disease of the Newborn. Am. J. Obst. & Gynec. 52:794 (Nov.) 1946.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - CHICAGO 10, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - : Eight dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such rotice should mention all journals receive' from this office. Important information regarding contribut' will be found on second advertising page following reading '

SATURDAY, FEBRUARY 15, '

BACKGROUND TO CHF

In a recent issue the Britis
lishes, under the heading .ie
therapy," a series of art ue directeu
and theoretic aspect ..ud staffing of the agenc
believes that the gress his recommendations, the
in its meanin among other things the desirability of
Ehrlich, a modifying the commissioned corps of the
chemic States Public Health Service and the desirability
che establishing an Office of Health and Medical Research
as a constituent unit of the agency.

The revised bill, while an improved measure, requires additional consideration, and it is assumed that adequate hearings will be held at which suggestions for improvement may be made before action is taken on it by the Senate Committee on Labor and Public Welfare.

Current Comment

ABSTRACT PERIODICALS

The British Medical Association began publication in January of two new periodicals entitled *Abstracts of World Medicine* and *Abstracts of World Surgery, Obstetrics and Gynaecology*. These are an outgrowth of the *Bulletin of War Medicine* published during the war years and discontinued in 1946. The new periodicals do not attempt to abstract all the articles published in all the medical journals. A selection has been made of the periodicals considered worthy of study, now about 1,000, and from these are chosen for abstract the articles judged to be of use to medical readers. The abstracts are collected under specialized headings, such as Hygiene and Public Health, Physiology and Biochemistry, Pharmacology and Therapeutics and under other medical specialties and groups of diseases. The name of the abstracter is attached to each abstract. As was announced in THE JOURNAL last week a similar publication is contemplated to be published in English in the Netherlands. No doubt, as other nations of the world return to the routine of medical life that

to an obs
as 1877.
bacilli in
the air, t
according
antagonis
gists who
for the
yiel

On the
out by the C
of the American
developed as to how the
in World War II. The questio
opportunity for those who were resp
care in those years to indicate what chang
made in the mobilization of medical service in
emergencies. Five thousand questionnaires represen
a small percentage of the total number of physicians who remained in civilian practice. Dr. Edward L. Bortz of Philadelphia, chairman of the Committee on National Emergency Service, has appealed to every physician receiving the civilian questionnaire to respond promptly. The accuracy of the facts obtained and the soundness of the conclusions made by the study will be determined to a great degree by the cooperation which those receiving the questionnaire give the committee. The committee received excellent cooperation from the 50,616 former medical officers who were mailed questionnaires last December on their experience in military service. These are now being analyzed and studied. The facts obtained will be used as a basis for recommendations to be made by the committee to the House of Delegates in June. With the cooperation of the 5,000 physicians who are now receiving questionnaires on their civilian experience, the committee will be able to complete the total study of how the medical profession can best serve our population, civilian and military, in the event of a future national emergency. Every physician who receives one of these questionnaires has a professional and humanitarian duty to perform in completing it and returning it promptly. It is preferred that each sign his name, but if any one wishes to remain anonymous, he may do so. A broad representation of facts, experiences and opinions will add to the scientific value of the results.

posed National Health Agency an Office of Medical and Hospital Care Services to supervise the administration of state programs. The director of this agency will be a doctor of medicine licensed to practice medicine, who has had at least five years of active medical practice, and who is outstanding in the field of medicine.

The new measure will require, as did the earlier one, that the state agency to administer the contemplated program on a state level must be the state health agency after a specified number of years. This would seem to be an inconsistency, since the federal administrative functions will be removed from the public health agency. It had been suggested that each state be permitted to designate its own agency, without federal interference in the selection.

A new section will be added authorizing an annual appropriation of $10,000,000 for a cancer program, which will replace a section in the old bill proposing grants for general medical research. The Administrator of the National Health Agency will be directed to make a study of the organization and staffing of the agency and report to the Congress his recommendations, the study to include among other things the desirability of retaining or modifying the commissioned corps of the United States Public Health Service and the desirability of establishing an Office of Health and Medical Research as a constituent unit of the agency.

The revised bill, while an improved measure, requires additional consideration, and it is assumed that adequate hearings will be held at which suggestions for improvement may be made before action is taken on it by the Senate Committee on Labor and Public Welfare.

Current Comment

ABSTRACT PERIODICALS

The British Medical Association began publication in January of two new periodicals entitled *Abstracts of World Medicine* and *Abstracts of World Surgery, Obstetrics and Gynaecology*. These are an outgrowth of the *Bulletin of War Medicine* published during the war years and discontinued in 1946. The new periodicals do not attempt to abstract all the articles published in all the medical journals. A selection has been made of the periodicals considered worthy of study, now about 1,000, and from these are chosen for abstract the articles judged to be of use to medical readers. The abstracts are collected under specialized headings, such as Hygiene and Public Health, Physiology and Biochemistry, Pharmacology and Therapeutics and under other medical specialties and groups of diseases. The name of the abstracter is attached to each abstract. As was announced in The Journal last week a similar publication is contemplated to be published in English in the Netherlands. No doubt, as other nations of the world return to the routine of medical life that prevailed in the prewar years, there may be revivals of abstract periodicals in the German speaking and Slavic nations. In the United States there are available the Current Medical Literature department of The Journal of the American Medical Association, the abstract departments of the specialized journals and several periodicals devoted wholly to abstracts of medical literature. Important also is the extensive abstracting service known as the *International Abstract of Surgery*, which appears in *Surgery, Gynecology and Obstetrics*.

PHYSICIANS IN CIVILIAN PRACTICE DURING WAR

In the event of another war the provision of medical care for civilian populations might be just as vital to victory as care of the men in the armed forces. New methods of war strike at industrial areas. The medical profession is wisely attempting to prepare now the facts and recommendations needed for any such future emergency. Recently 5,000 questionnaires have been sent to physicians, selected at random, who were in civilian practice during the war just ended. On the basis of the answers to these questionnaires, sent out by the Committee on National Emergency Service of the American Medical Association, facts may be developed as to how the civilian population was served in World War II. The questionnaires also provide an opportunity for those who were responsible for civilian care in those years to indicate what changes should be made in the mobilization of medical service in future emergencies. Five thousand questionnaires represent a small percentage of the total number of physicians who remained in civilian practice. Dr. Edward L. Bortz of Philadelphia, chairman of the Committee on National Emergency Service, has appealed to every physician receiving the civilian questionnaire to respond promptly. The accuracy of the facts obtained and the soundness of the conclusions made by the study will be determined to a great degree by the cooperation which those receiving the questionnaire give the committee. The committee received excellent cooperation from the 50,616 former medical officers who were mailed questionnaires last December on their experience in military service. These are now being analyzed and studied. The facts obtained will be used as a basis for recommendations to be made by the committee to the House of Delegates in June. With the cooperation of the 5,000 physicians who are now receiving questionnaires on their civilian experience, the committee will be able to complete the total study of how the medical profession can best serve our population, civilian and military, in the event of a future national emergency. Every physician who receives one of these questionnaires has a professional and humanitarian duty to perform in completing it and returning it promptly. It is preferred that each sign his name, but if any one wishes to remain anonymous, he may do so. A broad representation of facts, experiences and opinions will add to the scientific value of the results.

FUNCTIONAL TESTS IN DIAGNOSIS OF CORONARY DISEASE

Functional tests have been devised to reveal latent coronary insufficiency. They have some applicability for three groups of patients: those with some disorder in the chest slightly suggestive of angina, those whose symptoms resemble those of angina but whose chest pain is mild or atypical, and, finally, patients with clearcut angina with or without previous myocardial infarction. A functional test should provoke pathologic changes in the coronary circulation and cause a relative disproportion between supply of blood and demand, and thereby elicit anginal pain or typical electrocardiographic changes or both. According to Biörck[1] of Stockholm there are at least three ways of functional testing. The oxygen saturation of the blood can be reduced either by giving a patient a gas mixture which is deficient in oxygen or by using a low pressure chamber; the patient can be exercised, which increases the cardiac demand for oxygen without reducing the supply, or the work of the heart can be increased by epinephrine, the latter being the most dangerous method. Biörck has used the anoxemia or, as he prefers to call it, the hypoxemia test, by means of a 10 per cent oxygen and 90 per cent nitrogen mixture breathed for twenty minutes—or less in case definite anginal pain develops. Immediately after finishing the test the patient is allowed to breathe 100 per cent oxygen for at least five minutes. Electrocardiograms are taken at suitable intervals. Such tests may produce unpleasant and even alarming reactions, Biörck says, and cannot be recommended for general use.

A TRIBUTE TO THE YOUNG PHYSICIAN

Since demobilization, many thousands of experienced physicians have returned from military service to practice in civil life. Remaining in the service to care for the sick and wounded in the peacetime army and in the armies of occupation in Germany and Japan are mostly recent graduates in medicine, many of whom received their professional training under the Army specialized training program. The Deputy Surgeon General of the Army, Brig. Gen. Raymond W. Bliss, who recently returned from an inspection of medical installations in the European theater, has reported on the overall excellence of the service provided by these young physicians in Germany, France and Italy. General Bliss pointed out that during the war the medical corps was more of a cross section of mature American medicine. Today he said the cross section is of recent graduates who have completed their internships and varying degrees of medical and surgical residencies. These young physicians, he said, are alert, well trained, energetic, careful of their examinations of patients and thoroughly interested in their work. Patient care is on a high level and compares favorably with the highest standards of American medical practice. Commanding generals of headquarters, without exception, expressed their appreciation of the quality of the medical officers in their commands. These encouraging words are a well merited tribute to the young physicians now serving this country; they are a tribute also to those who evolved our system of medical education and who maintain its standards.

FUNDAMENTAL REQUIREMENTS OF INSURANCE

Elsewhere in this issue appears a statement of the fundamental requirements for insurance by the director of the Bureau of Medical Economic Research of the American Medical Association. His article sets forth succinctly the points of basic importance in any insurance program. With these points in mind, the fundamental lack of soundness in a nationwide compulsory sickness insurance system in a government such as ours becomes apparent. (The federal Social Security Act does not cover every citizen nor does any other experiment in social insurance in the United States.) The power to include every citizen in any scheme of social insurance is an inherent attribute of sovereignty, although no social insurance system in the world actually covers every person. One hundred per cent full employment cannot be maintained in a free enterprise system but is theoretically possible in a totalitarian society. A nation which can compel every citizen to inclusion in a medical care program could equally compel every citizen to purchase shoes, hats, tobacco or any other item in common use in the nation. A compulsory system of sickness insurance invokes the power of the state to determine the contribution of each citizen, which is essentially a tax, and to determine the extent of the benefit received. In such a system a definite connection between the two scales need not exist. In an insurance plan the benefit must be definitely related to the premium. Social insurance is based on the power of the government to compel action. Thus it could violate all the fundamental requirements of insurance that are listed by Dickinson. The program depends on the power of government to meet deficits by other taxes without relationship to the actual cost of the insurance. Thus insurance and social insurance are two entirely different procedures. The American people have shown their confidence in insurance by their voluntary purchase of life insurance, motor car insurance, fire insurance and other forms in which the basic principles of insurance prevail. They can no doubt be persuaded or taught similarly to avail themselves of sound voluntary systems of insurance against the costs of hospitalization and sickness. If Americans want to maintain the free society by which our nation has grown to its present high estate they will abide by the time tested requirements of insurance in seeking protection against the hazards of sickness and they will avoid the blind faith that would be necessary to usher in a uniform system of compulsory sickness insurance in this country.

---

[1] Biörck, Gunnar: Anoxemia and Exercise Tests in the Diagnosis of Coronary Disease, Am. Heart J. 32:689 (Dec.) 1946.

ORGANIZATION SECTION

Washington Letter

(From a Special Correspondent)

Feb. 12, 1947.

President Asks Continuance of Controls on Streptomycin

American made streptomycin is one of eight groups of items on which President Truman has asked Congress to continue controls beyond March 31. According to the Civilian Production Administration the request was made because of the growing importance of the drug in the national health program. A sudden rise in demand is expected if further clinical evaluation indicates that it is useful in the treatment of tuberculosis and other diseases. Dr. Paul A. Bunn, associate chief, Veterans Administration tuberculosis division, reports that streptomycin has been so successful in the treatment of advanced tuberculosis in seven veterans' hospitals that nineteen study units have been added. Of 50 veterans who had the deadly, military type, the meningitis type or a combination and would certainly have died, 27 are alive, Dr. Bunn reported. Of 91 veterans with the common pulmonary tuberculosis, all advanced, 77 per cent improved with the drug treatment and none got worse. No cases were completely cured. Studies have been conducted since last July.

Stand of Association Against Insurance Legislation Explained by Speaker

Dr. Henry Cook Macatee, president, Washington Health [illegible]y Administration, told the Washington Club here why [illegible] American Medical Association opposes proposed legislation [illegible] federal health insurance. He said the medical profession is not opposed to "socialized medicine" and cited various projects the profession has supported, such as milk pasteurization, vaccinations, community hospitals and other health measures designed for the public good. He declared that the Wagner-Murray-Dingell bill was opposed because it would hinder medical research, doctor-patient relationships and other liberties contributing to medical progress and simultaneously would fail to provide promised benefits. The bill would place medicine under control of bureaucracy, and the costs would be prohibitive.

Neurosyphilis on Decline Twenty-Five Years After Beginning of Malaria Treatment

Dr. Theodore C. Fong, head of the syphilis department in the medical-surgical hospital at St. Elizabeths Hospital, believes that neurosyphilis was on the decline when the twenty-fifth anniversary of the use of malaria to fight dementia paralytica was noted here. He stated his belief that the crusade against venereal disease, together with advances in chemotherapy, especially the use of penicillin, will further reduce hospital admissions for dementia paralytica and locomotor ataxia. Dr. William P. Herbst, president of the District of Columbia Social Hygiene Society, reports that the capital's venereal disease rate has been reduced by better diagnosis and treatment and improved public health programs. Major Gen. Norman T. Kirk, Surgeon General of the Army, declared the venereal disease rate among American troops had been exaggerated.

Study of Proposals to Create Federal Department of Health

Dr. George F. Zook, president of the American Council of Education, heads a committee appointed to study proposals to create a federal department of health, education and security. The committee has been sponsored by the council and by the National Social Welfare Assembly. Serving as co-chairman are Dr. Ernest L. Stebbins, Johns Hopkins University, and C. M. Bookman, executive vice president, Cincinnati Community Chest.

Cancer Survey to Be Conducted

Dr. Harold F. Dorn of the U. S. Public Health Service has been lent to the District health department to conduct a cancer survey. He will be assisted by ten medical students from local medical schools. Dr. Calvin T. Klopp, director of the Warwick Memorial Cancer Clinic at Garfield Hospital, announced that the clinic has been completely reorganized so that any patient having or suspected of having cancer can be accepted. Dr. John Rogers, research trainee at the National Cancer Institute, was assigned to the clinic for training. The institute announced the opening of a cancer clinic for children in Gallinger Hospital. Institute specialists report that tumors in children are more common than is realized.

Bill to End "Fly by Night" Training Schools for Practical Nurses

A bill to end "fly by night" training schools for practical nurses has been presented to District authorities for submission to Congress. It has the backing of the Undergraduate and Practical Nurses' Association, the Graduate Registered Nurses' Association, the Medical Society of the District of Columbia and the District board of health. Mrs. Elizabeth Earl, legislative chairman, Graduate Nurses, stated that "the bill will standardize education and training schedules of all practical nurse training schools so that graduates can fully meet the requirements for licensing."

Production of More Efficient Artificial Limbs

Major M. J. Fletcher, director of the Army Prosthetic Research Laboratory at Walter Reed Hospital, reports that more efficient artificial limbs than those now in general use by amputees are being produced. In the year since the laboratory was set up new appliances have been devised, some fitted for amputees. The advantages reported are great pressure, smoother operation and easier control, lightness and easier maintenance and appearance almost indistinguishable from that of natural limbs.

Veterans Administration Patients Without Service Connected Disability

Dr. Paul R. Hawley, medical chief, Veterans Administration, informed the House Committee on Veterans Affairs that 82.5 per cent of all patients in veterans' hospitals have no disability or illness connected with service in the armed forces. Dr. Hawley outlined the veterans' medical program and said that no veteran with a service connected illness has to wait a single day to get into a hospital for treatment. Plans are under way to build seventy-four new hospitals.

Distribution of Surplus Plasma

The American Red Cross is distributing 1,500,000 packages of plasma declared surplus by the armed forces at the end of the war, officials have announced. More than half has already been allocated to various states. Dr. G. Foard McGinnes, Red Cross vice chairman for health services, states that "this marks the first time in the history of medicine that enough plasma is readily available for normal and emergency needs in civilian medical practice."

Decrease in Illegal Drug Traffic But More Arrests

The enforcement division of the U. S. Treasury Department has reported a drop in the illegal drug traffic but an increase in arrests during 1946. The close of the war and the interruption of supply lines were credited with cutting the drug traffic. There were more than 3,000 arrests for narcotic and marihuana law violations in 1946 compared with about 2,000 in 1945.

Bethesda Becoming "Health Center of the World"

Bethesda, Md., home of the Naval Medical Center, the National Institute of Health, and the proposed site of atomic research facilities, a mental research institute and other facilities, is being publicized as living up to its historic namesake, the Biblical pool where the ill were healed. The town is called "Health Center of the World."

Medical Economics

FUNDAMENTAL REQUIREMENTS OF INSURANCE APPLIED TO VOLUNTARY PREPAYMENT MEDICAL CARE PLANS

FRANK G. DICKINSON, Ph.D.
Director, Bureau of Medical Economic Research
Chicago

The physician has a professional interest in the success of voluntary prepayment medical care plans because they demonstrate the determination of his profession to provide a sound method of budgeting the costs of better medical care. As a citizen of the community, he has an interest in their success because they offer the best way of solving, on a democratic basis, the difficult social and economic problems created by the irregularity in the family's need for the services of physicians. As these plans develop, the physician will come to look to such plans for a more or less substantial part of his income. He will want to be certain that they will be able to fulfil their obligations.

Successful voluntary prepayment medical care plans must follow the sound basic requirements of insurance—requirements which have been discovered and tested by generations of experience in other fields and which have endured to guide the medical profession in extending the benefits of medical service. Furthermore, not all economic risks are insurable.

Every physician should familiarize himself with the few basic requirements for the successful operation of any such insurance plan. He will want to discuss these requirements with his colleagues and with others in the community who are interested in making adequate medical care available at a reasonable cost. Finally, he will want to use his influence to make certain that the plan with which he is connected or which is being planned in his community meets these seven basic requirements:

1. *Laws of Mathematical Probability.*—All insurance is based on the ability to predict, with a high degree of accuracy, just how often a certain event may occur. The first essential requirement of health insurance, then, is that there shall exist laws of mathematical probability which apply. The laws of probability are well developed and will apply to health insurance if the other essential conditions of insurance actually are met.

2. *Insurable Interest.*—A second requirement of insurance is that the person must stand to lose financially by the occurrence of the event against which he wishes to be insured. Every one knows that one cannot buy a fire insurance policy on a building which one does not own. One cannot insure the life of a total stranger in whose welfare one has no personal interest. This requirement is known as that of insurable interest. Since any one subscribing to a health insurance plan can be assumed to be financially interested in the health of himself and his family, this requirement can be met.

3. *A Large Number of Independent Risks.*—A fire insurance company could not afford to concentrate its entire business in a single congested area of a city which might be wiped out by a single blaze. It is necessary that such a company spread its risks over a large number of individual buildings located over a wide area. In this way the company is risking the occurrence of a large number of separate fires rather than a single totally destructive one. By the same token, a prepaid medical service plan cannot afford to limit its membership to a group of employees or families working or living so close together that a single epidemic might cause a high percentage of the premium payers to require medical service at the same time. The third requirement, then, is that there shall be a large number of policyholders scattered over a wide enough area so that it is unlikely that any substantial percentage of persons will demand medical service at any one time.

4. *Importance of the Risk.*—Actuarially, it would be possible to predict the occurrence of, and to offer insurance against, becoming bald at the age of 35. Except in the occasional case of some one such as an actor, however, it is doubtful that any one would consider a risk of this kind sufficiently important to warrant paying the cost of operating an insurance business for such a purpose. Health, on the other hand, is important enough to every one to justify the payment of premiums sufficiently large to provide medical care and to defray the operating cost of the plan. This is true also in the case of prepayment plans which offer only surgical benefits, since a substantial number of the cases in which sickness proves an overwhelming burden on the patient's pocketbook involve surgical service.

5. *Uncertainty of Occurrence.*—It is not sound to attempt to use insurance to guard against something that is certain to occur. For instance, it would be unsound to attempt to use insurance to guard against the depreciation of a building. Buildings are certain to depreciate. If a policy against depreciation were offered, the premiums charged would have to be high enough to meet the total cost of depreciation plus the cost of operating the insurance company. For this reason, sound business practice has established the plan of setting aside a certain amount each year to meet depreciation costs, thus avoiding the necessity of paying the additional operating costs of an insurance business.

An all inclusive health insurance policy approaches this limitation of certainty. It is almost certain that any given family will need the services of a physician three or four times a year. Any attempt to cover these usual and minor expenses for medical care, then, actually violates this requirement of uncertainty of occurrence. Rarely does insurance meet the full amount of the loss in any kind or type of insurance. Since we are dealing with something that is almost certain to occur, the policyholder would be just "trading dollars" with the health insurance plan which covered all expenses. The premium in such cases must be large enough to cover the cost of the initial visits which the policyholder is almost certain to require each year—plus the cost of operating the plan—plus the necessary amount to build up a reserve to meet the occasional severe illness. Therefore the policyholder is actually paying more for these initial visits than he would pay if he dealt directly with his physician for these minor needs. In order to provide adequate funds to meet these needs, plus operating expenses, plus reserve for the occasional severe illness, the plan's premiums must be so high as to discourage widespread participation. If they are not, the time will come when the plan will have so exhausted its resources in meeting the costs of minor illnesses that it will be unable to meet the expenses of the major one. Compulsory sickness insurance systems in other countries specify a waiting period of three to fourteen days. Witness also the $25 deductible provision in the automobile collision insurance policy.

By way of illustration, there is no actuarial reason why a man of 85 should not buy a life insurance policy. However, it is not practical for him to do so because such a policy probably would cost something like $900 in a single premium plus the percentage of operating cost of the company in order to obtain a policy for $1,000. The reason is that at age 85 death is certainly so near that insurance against it is unsound economically.

6. *The Insurance Itself Must Not Immeasurably Increase the Risk.*—If there were no arson laws for the punishment of persons proved guilty of incendiarism, it is highly probable that fire insurance companies would be unable to operate. It would be too simple for a person to take out a fire insurance policy and then to set fire deliberately to the building in order to collect the insurance. In such a case the issuance of the insurance policy would have increased the risk of destruction of the building by fire, since the owner certainly would not have burned his property unless he had some hope of extra compensation.

We must examine this requirement carefully in considering plans for health insurance. Will a family which has a health insurance policy make greater demands on its physician than it would make if it did not have such a policy? Unlike the case of incendiarism, there are no laws to prevent persons from making unnecessary demands on their physician for his services. However, if the number of extra calls on a physician due to the issuance of the health insurance policy is increased to a degree which can be measured and predicted, then it still is possible to determine the probable cost of operation and feasible to issue such policies. If the increase cannot be measured and predicted, the risk cannot be insured. (It must be remembered that if the increase in risk on this basis made loss almost certain, it would violate requirement 5, even though it could be measured and predicted.)

7. The Risk Must Be Measurable.—This is by far the most important requirement of insurance. It means simply that it must be possible to determine in advance just how frequently losses are likely to occur, just how great those losses are likely to be in the aggregate and for each risk so that the correct premium can be determined. In health insurance it means that it must be possible to figure out in advance just how much the total doctor bill for each thousand insured persons or families is likely to be.

There are a number of clear examples of violations of this fundamental requirement. For instance, there were the mortgage guaranty companies which flourished in New York State in the 1920's. For one half of 1 per cent or more of the interest paid, they agreed to pay interest and principal of the mortgage if the borrower was unable to do so. Everything went well as long as times were good and a relatively few borrowers defaulted. In the 1930's, however, when the depression struck, borrowers defaulted in such great numbers that these insurers were unable to meet their obligations out of their reserves. The difficulty here was that it is impossible to predict when there will be a great depression or how many borrowers will default on their payments.

Another illustration of the violation of this requirement is the experience that life insurance companies had with the disability provisions which they issued in the 1920's. This special rider on life insurance policies provided for the payment of $10 monthly per thousand dollars of insurance in the event of disability. Disability usually was defined as the inability of the person to perform his duties. When widespread unemployment, financial bankruptcy and unproductive business operations came in the 1930's, great demands were made on this disability provision. Some of these demands were genuine because of sickness or worry. Undoubtedly, however, there was a large amount of malingering on the part of persons who found it more profitable to remain at home drawing benefits than to attempt to return to unprofitable business operations or nonexistent employment. The insurance companies lost heavily and ceased to write such policies.

Another example is unemployment compensation if viewed as insurance. It will be remembered that the late President Roosevelt always was very careful to refer to it as unemployment compensation rather than unemployment insurance. The fact is that it is not insurance because it violates this essential principle that the risk must be measurable. Who can measure how long the next protracted period of mass unemployment will be? Who knows when it will come? Who can tell how much prosperity will intervene during which period wage earners will be paying into the reserves of the fund? Since none of these things can be measured, it is impossible to tell what the total risk may be in the long run, and it is therefore impossible to tell how much reserve will have to be amassed to meet that risk.

This requirement that the risk must be measurable is highly important to the physician who is concerned with the success of prepayment medical care plans. It is not enough that the plan has completed one year, or five years, with a reserve fund on hand. It must be strong enough to weather a great depression during which the loss and expense ratios might rise rapidly even though the general health situation was favorable. Reserve funds developed in prosperous times will doubtless be needed to offset unpredictable increases in loss and expense ratios during depressions. For this reason the "pro rata" feature is excellent; it provides that the participating physicians must accept less than their approved fees if the income of the plan for the year is less than the amount of the total approved fees. This transfer of some of the risk, especially in a year of depression, from the plan to the participating physicians makes them underwriters and should make their plan a tower of strength during periods of unemployment. This feature would enable any plan to comply fully with this seventh essential requirement of insurance because, even though certain health risks may not be measurable or predictable, the plan is secure. Premiums need not be equal each year to the total approved fees of the participating physicians for services rendered members during that year. The physician is, in the language of the insurance world, a reinsurance underwriter. Without this feature a plan might be a house of cards instead of a tower of strength at the bottom of the business cycle. Although the "pro rata" feature may be hard on the doctor, it makes the plan stronger than it would be if it merely complied with the seven fundamental requirements of insurance. The stronger the plan, the better it is for the doctor.

The experience amassed by prepayment medical care plans since 1940 does not cover a sufficiently long period of time or a sufficiently broad section of the population during depression and prosperity to permit us to measure with accuracy the risk that might be involved in the event of a serious epidemic or a great depression. The "pro rata" feature enables our medical care plans to meet this essential requirement of sound insurance practice *now* without waiting to accumulate broad and detailed actuarial experience.

COMMENT

I have set forth the seven characteristics of an insurable economic risk. I believe that voluntary prepayment medical care plans, carefully designed and operated, comply with these requirements forged out of several centuries of insurance experience. The most serious mistake which doctors could make would be to claim too much for this great economic and social institution of a free society. As Marshall de Villars said when taking leave of Louis XIV, "May God defend me from my friends; I can defend myself from my enemies."

Medical Legislation

MEDICAL BILLS IN CONGRESS

Streptomycin

A bill introduced by Senator White, Maine, S. 445, at the request of the Federal Security Administrator, proposes to amend the Federal Food, Drug and Cosmetic Act of June 25, 1938, as amended, by providing for the certification of batches of drugs composed wholly or partly of any kind of streptomycin or any derivative thereof. Two other drugs are now certified by the Food and Drug Administration, insulin and penicillin.

Medical Department of the Army

Companion bills propose to revise the Medical Department of the Army, S. 504, introduced by Senator Gurney, South Dakota, and H. R. 1673, introduced by Representative Bolton, Ohio. Among other things, this legislation would establish in the Medical Department of the regular Army a Medical Service Corps to consist of a Pharmacy Section, a Medical Allied Science Section, an Optometry Section and such other sections as may be deemed necessary by the Secretary of War.

Federal Grants-in-Aid to State and Local Governments

A resolution introduced by Senator Morse, Oregon, S. 61, proposes to authorize a duly appointed subcommittee of the Committee on Labor and Public Welfare to make a study with respect to existing and proposed federal grants to state and local governments for welfare, education and health programs and to report to the Senate from time to time the results of its studies and investigations, together with such proposed legislation and other recommendations as it may deem desirable.

Medical Care for Dependent Members of Veterans' Families

A bill introduced by Senator Pepper, Florida, as S. 465, proposes that the dependent members of the family of a veteran of any war of the United States shall be furnished proper medical examination, medical care, treatment, hospitalization, dispensary, convalescent care necessary and reasonable after-care, welfare, nursing and such other services as may be necessary for the maintenance of good health and the prevention of illness, such service to be made available by the Administrator of Veterans' Affairs at hospitals, domiciliary institutions, outpatient dispensaries or stations, or such other facilities available to or contracted for by the administrator, if suitable accommodations or services are available. Such service will be rendered at a per diem or other reasonable cost to such dependents concerned.

Miscellaneous

A bill introduced by Representative Fellows, Maine, H. R. 1589, would provide that all the provisions of all laws administered by the Veterans Administration which extend benefits to any woman who served honorably as a nurse, chief nurse or superintendent of the Nurse Corps under contract with the United States for ninety days or more between April 21, 1898 and Feb. 2, 1901 be extended to any man who served honorably in any such capacity under contract with the United States for ninety days or more between such dates.

Representative D'Alesandro, Maryland, proposes by H. R. 1537 to authorize the erection of a United States Veterans Administration general **medical-surgical hospital facility at Baltimore.**

The Civil Service Act would be amended by a bill introduced by Senator Ellender, Louisiana, as S. 159, to provide that **no person shall be discriminated against** in any case because of his or her impaired hearing, in examination, appointment, reappointment, reinstatement, reemployment, promotion transfer, retransfer, demotion or removal, with respect to any position the duties of which, in the opinion of the head of the agency concerned, may be efficiently performed by a person with impaired hearing.

STATE LEGISLATION

Arkansas

Bill Introduced.—H. 43 and H. 87 propose to require each applicant for a **marriage license** to present a certificate from a duly licensed physician stating that the applicant has undergone a standard serologic test for syphilis and has been found free from syphilis in a communicable stage.

Bill Passed.—H. 18 passed the house January 22. It proposes to require every physician at the time of the first examination to take or cause to be taken a sample of the **blood of a pregnant woman** and submit the same to an approved laboratory for a standard serologic test for syphilis.

California

Bills Introduced.—A. 717, to amend the business and professions code, proposes to authorize the issuance of a **naturopathic physician's certificate** which would authorize the holder "to practice naturopathy, which includes physiotherapy, manual, mechanical and manipulative therapy, psychoanalysis, psychotherapy, electricity, nonnarcotic herbs, supplemental foods, vitamins, air, water, diet, massage, endocrinology, biochemistry, accident and occupational therapy and all other natural methods consistent with naturopathic science" A. 797, to amend the probate code, proposes that every person of sound mind over the age of 18 years may by will **dispose of the whole or any part of his or her body** to a teaching institution, university, college or legally licensed hospital, either for use as such institution, university, college or hospital may see fit or for use as expressly designated therein. S 353 proposes the enactment of a **hospital survey and construction** act requiring a statewide survey of hospital facilities and a program for the construction of needed additional facilities, as well as the establishment of an Advisory Hospital Council The survey would be administered by the State Department of Public Health, which would be appointed as the state agency to accept money received from the federal government for state assistance in either survey or construction programs

Connecticut

Bill Introduced.—H 146 proposes to authorize the state department of health to obtain **human blood from donors** or from agencies, to process it and to provide reserves of blood or blood derivatives in various parts of the state.

Massachusetts

Bills Introduced—H. 706 proposes that the College of Physicians and Surgeons shall **not register any new students** other than persons who have served in the armed force of the United States during World War II and been honorably discharged therefrom H. 947 proposes that every physician registered to practice medicine and surgery who obtained his medical degree from a medical school registered in the state at the time he was licensed **shall be allowed to practice** his profession in every public hospital in the state supported by public funds and be able to treat patients medically or surgically in such hospitals, and that the right to so practice shall not be denied because the physician is not a member of a private medical society or because of religion, nationality or race. H. 1132 proposes the enactment of a law providing for a voluntary system for the payment of hospital, surgical operation, sickness and bodily injury and maternity **benefits to employees.** H. 1619 proposes the enactment of a cash sickness compensation act. S 167, to amend the law relating to hospitals, proposes that hospitals, except those established by the commonwealth or any political subdivision thereof and those in which not less than one third of the patients are charity patients, **shall be liable in tort for damages** to patients resulting from acts of negligence of the agents or servants of the hospital The benefits of this proposal would not accrue to charity patients S. 169, to amend the **workmen's compensation act,** proposes that the record of any examination, diagnosis, prognosis or treatment of an employee shall not be furnished, nor shall any of the information contained therein be furnished or disclosed, to any employer or insurer by any doctor, physician, surgeon, nurse or other person unless the employee consents

Missouri

Bills Introduced.—H 63, to amend the prenatal examination law, proposes that the **examination of a pregnant woman** for the presence of syphilis shall be mandatory rather than just with the consent of the woman H 64, to amend the law relating to the **control of contagious diseases** among school children, proposes to authorize the school board to require that all children show proof of immunity against diphtheria and smallpox.

Nebraska

Bill Introduced.—Bill No. 160 proposes the enactment of a state hospital survey and construction act requiring **an inventory of existing hospitals** and a program for the construction of needed additional facilities The proposal would also provide for compliance with the requirements of the federal hospital survey and construction act and regulations thereunder.

New Mexico

Bills Introduced.—S. 12 proposes the enactment of a state hospital survey and construction act requiring **a survey of existing hospitals** and a program for the construction of needed additional facilities. The proposal also provides for compliance with the requirements of the federal hospital survey and construction act and regulations thereunder. S. 21, to amend the food and drug act, proposes that **drugs to be sold at retail** and containing any quantity of aminopyrine, barbituric acid, cinchophen, dinitrophenol, sulfanilamide or their derivatives shall be subject to certain labeling provisions unless sold on a written prescription signed by a member of the medical, dental or veterinary profession licensed by law to administer such drug S 51 proposes **to define a clinic** as an establishment where patients are admitted for special study and treatment by a group of physicians practicing medicine together and proposes further that no person or group of persons shall use the word clinic in connection with any establishment or office which does not come within such definition S. 52 proposes to require all persons licensed to practice any of the healing arts to clearly **designate the school of medicine** or practice which such person is licensed to engage in and further provides that failure to comply with such restriction would constitute unprofessional conduct. S. 53 proposes to authorize the use of the **injunctive process** to restrain the illegal practice of medicine or the healing arts.

New York

Bills Introduced.—A. 493 proposes the enactment of a comprehensive statewide system **of health insurance.** A. 661, to amend **the medical practice act,** proposes that such act shall not apply to a corporation organized under the insurance law and employing duly licensed physicians or entering into contracts with duly licensed physicians, or with partnerships or groups of duly licensed physicians, to practice medicine on its behalf for persons insured under its contracts or policies A 662, to amend the section of **the medical practice act** setting forth grounds for the revocation of a license, proposes that the prohibition against advertising under a false or assumed name shall not apply to persons constituting a partnership or group of physicians who have an agreement with a nonprofit corporation created under the insurance law to provide medical care for insured persons of such corporation. A. 663, to amend the section of **the medical practice act** relating to the revocation of a license, proposes that nothing in the act shall prohibit physicians from practicing medicine as partners or in groups nor from pooling fees and monies received, either by the partnerships or groups or by the individual members thereof, for professional services furnished by any individual physician, member or employee of such partnership or group, nor shall the physicians constituting the partnerships or groups be prohibited from sharing, dividing or apportioning the fees and monies received by them or by the partnership or group in accordance with a partnership or other agreement.

Pennsylvania

Bill Introduced—S. 43 proposes that it shall be unlawful for any doctor, hospital, nurse or other person or persons practicing medicine or affiliated with the medical profession to perform **blood transfusions** without first having ascertained by a Wassemann test that the blood of the donor is free from any venereal disease.

Utah

Bills Introduced—H 88 and S 130 propose to authorize the issuing of licenses to practice as **a naturopathic physician** without the use of drugs and surgery or as a naturopathic physician and surgeon in accordance with the tenets of a professional school of naturopathy recognized by the department of registration, etc Naturopathy is not defined by the proposal S. 104 proposes an act to require the licensing, inspecting and regulating of hospitals and the appointment of a **hospital advisory council.**

Coming Medical Meetings

American Association for the Study of Goiter, Atlanta, Ga, April 3 5 Dr Thomas C Davison, 478 Peachtree St, N. E, Atlanta 3. Secretary

American Otorhinologic Society for the Advancement of Plastic and Reconstructive Surgery, New York, February 27. Dr. Norman N. Smith, 291 Whitney Ave, New Haven 11, Secretary.

Central Surgical Association, Chicago, Feb. 20 22. Dr. Walter G. Maddock, 250 East Superior St., Chicago, Secretary.

Chicago Medical Society Annual Clinical Conference, Chicago, March 4-7. Dr. Willard O. Thompson, 30 N. Michigan Blvd, Chicago 2, Secretary.

Dallas Southern Clinical Society, Dallas, Texas, March 17-20. Dr. Glenn D. Earlson, 1133 Medical Arts Bldg., Dallas, Secretary

Michigan Postgraduate Clinical Conference, Detroit, Book Cadillac Hotel, March 12 14 Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

Missouri State Medical Association, Kansas City, March 30 April 2 Mr. Thomas R. O'Brien, 634 N. Grand Blvd, St. Louis 3, Executive Secretary.

New Orleans Graduate Medical Assembly, New Orleans, Feb. 24 27. Dr. Max M. Green, 1430 Tulane Avenue, New Orleans 13, Secretary.

Pacific Coast Surgical Association, Seattle, Feb. 17-18; Victoria, B. C., Feb. 19-21. Dr. F. L. Reichert, Stanford University Hospital, San Francisco, Secretary.

Southwest Allergy Forum, Shreveport, La., March 31-April 1. Dr. Sim Hulsey, 505 Medical Arts Bldg, Fort Worth, Texas, Secretary.

Tennessee State Medical Association, Memphis, April 8 10. Dr. W. M. Hardy, 706 Church St, Nashville 3, Secretary.

GOVERNMENT SERVICES

ARMY

CELEBRATION OF ARMY WEEK

The War Department announces that Army Week will be observed for the first time April 6-12. The traditional Army Day celebration on April 7 will be held as usual and sponsored by the Military Order of the World Wars. The purpose of Army Week is not only to honor America's soldiers but to explain to the public the need for a well trained, efficient army of volunteers to discharge its duties as this country joins all United Nations in building permanent world peace; and to bring the people and the Army closer together in our national community. The theme is "A Strong America Is A Peaceful America." The War Department will conduct activities during Army Week in many cities and towns of the country. Ground forces and Air Forces will put on exhibits and demonstrations. Army posts and installations and National Guard armories will have "open house" on certain days. Many civic and other organizations will join in the celebration.

SOLDIERS' CHRISTMAS MAIL LOST AT SEA

About 2,800 sacks of Christmas mail for military personnel in Korea were lost at sea, the Adjutant General has announced. The sacks contained parcel post, magazines and newspapers only, no letter mail being lost. This mail was aboard the *Lakeland Victory*, which left San Francisco on November 27. The ship encountered a hurricane about 1,700 miles from Korea, sustaining severe damage and loss of the mail. Post offices will accept claims covering the loss or damage of insured parcels mailed to military personnel overseas after four months have elapsed from the date of mailing. Persons whose packages may have been affected may apply to their local postmasters for further information after the four month waiting period has elapsed.

ESTABLISH VENEREAL DISEASE CONTROL COUNCIL

The War Department has announced the establishment of a Venereal Disease Control Council for the purpose of insuring that all possible control measures are employed to reduce venereal disease in the Army. The council will meet each month to consider such problems, to develop standard educational and control measures and to review control procedures adopted in the field. The council is authorized to take immediate corrective action when reports indicate unsatisfactory conditions which are beyond the control of the local or army commander and to establish policies for the reduction and control of venereal disease based on research, surveys and field experience. The members of the new council are Major Gen. Willard S. Paul, chairman; Major Gen. Norman T. Kirk, the Surgeon General; Major Gen. Floyd L. Parks, chief, Public Relations Division; Major Gen. Luther D. Miller, chief of Army Chaplains; Brig. Gen. Russel B. Reynolds, chief, Special Services Division; Brig. Gen. B. M. Bryan, Provost Marshal General, and the recorder, Lieut. Col. John J. Easton. Additional members, representatives of the Secretary of War, Army Ground Forces and Army Air Forces, were to be named early in January.

As previously announced, the Army sent sixteen selected medical officers to attend classes in venereology at the University of Pennsylvania for two months, after which they will return to their stations and be followed by another class of selected medical officers. Such courses have become necessary, General Kirk said, to replace the specialists being separated from the service. While these courses will not produce specialists in venereal disease management, General Kirk said, this is a step in the right direction. The courses are being conducted by Dr. John H. Stokes, professor of dermatology-syphilology in the Graduate School of Medicine at the University of Pennsylvania.

ARMY AWARDS AND COMMENDATIONS

Colonel Albert W. Greenwell

The Legion of Merit was recently awarded to Col. Albert W. Greenwell, M. C., U. S. Army, of West Point, N. Y. The citation stated that as commanding officer, Regional Hospital, Fort Jay, New York, from July 1943 to June 1945, Colonel Greenwell rendered outstanding service. When this installation, originally a post hospital, was designated as a regional hospital, he speedily and effectively reorganized it to function as such without interruption of any of the regular services. He put into effect policies and procedures for expediting the processing of hospital cases without lessening the thoroughness of professional care and developed a comprehensive plan for emergency hospital service. Dr. Greenwell graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1916 and entered the service Aug. 28, 1917.

Colonel William P. Corr

The Legion of Merit was recently awarded to Colonel William P. Corr, M. C., A. U. S., of Riverside, Calif. The citation read as follows: "For meritorious service at Dibble General Hospital, Menlo Park, Calif., from October 1943 to June 1945. As Chief of the Professional services he organized this section on a high plane. He displayed at all times a wide knowledge of all phases of internal medicine, quiet yet forceful leadership and high ideals of the practice of medicine." As interim commanding officer of the hospital when near its peak load, he demonstrated administrative ability as well, and maintained the hospital in splendid condition. Dr. Corr graduated from Rush Medical College in 1924 and entered the service April 16, 1941.

Colonel Robert Skelton

The Legion of Merit has been awarded to Col. Robert Skelton, M. C., U. S. Army, the citation explaining that Colonel Skelton displayed outstanding ability as commanding officer, San Francisco Medical Depot, from December 1941 to August 1945, in solving the numerous problems of storage and distribution of medical supplies. His exceptional achievements contributed materially to the maintenance of a high standard of efficiency in depot operations and medical supply activities. Dr. Skelton graduated from the University of Pennsylvania Medical School in 1908 and entered the military service Feb. 1, 1911.

Colonel Paul A. Campbell

The Legion of Merit was recently awarded to Col. Paul A. Campbell, Chicago. The citation read as follows: "As Director of Research, Army Air Forces School of Aviation Medicine, from May 1942 to October 1945, Colonel Campbell directed a research program which provided solutions to hundreds of medical problems associated with aviation. His outstanding professional ability and extraordinary achievements reflect great credit on himself and the armed forces of the United States." Dr. Campbell graduated from Rush Medical College in 1928 and entered the service Nov. 29, 1940.

Colonel John C. Woodland

The Legion of Merit was recently awarded to Col. John C. Woodland, M. C., now of San Antonio, Texas. Colonel Woodland performed exceptionally meritorious services as chief of medical service and commanding officer, Brooke General Hospital, from December 1941 to March 1946. The citation emphasized his outstanding leadership and professional ability as reflected in the fine medical service provided by the hospital. Extensive research carried out under his supervision resulted in important discoveries in the field of virus and rickettsial diseases. Dr. Woodland graduated from the University of Maryland School of Medicine in 1915 and entered the service Feb. 25, 1918.

Lieutenant Colonel Raymond K. Farnham

The Legion of Merit was recently awarded to Lieut Col Raymond K Farnham of Scarsdale, N Y, for outstanding service as chief, disposition and retirement branch physical standards division, Office of the Surgeon General, from January 1944 to October 1945 The citation emphasized his exceptional skill and judgment in the development and compilation of the Medical Section of TM 12-245, a manual procedure for members of army retiring boards to follow in the consideration of officer personnel brought before them This officer, by his knowledge of medicine and surgery and his comprehensive understanding of the regulations, statutes and public laws governing the retirement of officer personnel gave expert advice and indoctrination to members of retiring boards throughout the United States as well as to high officials in the War Department members of Congress and officers being considered for retirement Dr Farnham graduated from the University of Vermont College of Medicine, Burlington in 1926 and entered the service May 6, 1942

Lieutenant Colonel William Leigh Cook Jr.

The Legion of Merit was recently awarded to Lieut Col Leigh Cook Jr, M C, A U S, of Alexandria, Va The citation states that, while serving as assistant director and later as director, Occupational Health Division, Office of the Surgeon General, from October 1942 to September 1945, he contributed immeasurably to the high standards characteristic of the industrial medical program in the Army He was a prime figure in establishing a successful occupational health program in the arsenals and industrial plants operated by the United States Army Through his unusual ability, industry and loyal devotion to duty he promoted a program to increase the health and efficiency of over 900 000 vital war workers Dr Cook graduated from Columbia University College of Physicians and Surgeons, New York, in 1934 and entered the service May 7, 1942

Lieutenant Colonel Walter E. Barton

The Legion of Merit was recently awarded to Lieut Col Walter E Barton, Worcester, Mass The citation read as follows "He served in various assignments in the office of the Surgeon General, Washington, D C, from April 1943 to June 1945 and was largely responsible for the organization and early development of the Reconditioning Program for convalescent army patients His specific services in shaping the doctrine and policy of the four interrelated services of occupational therapy, rehabilitation of the war blind and deafened, general reconditioning and reconditioning of neuropsychiatric patients were instrumental in furthering the standard of professional medical care and reflect the highest credit on himself and the Army Medical Corps" Dr Barton graduated from the University of Illinois College of Medicine in 1931 and entered the service Sept 10, 1942

Lieutenant Colonel Leonard B. Barnard

The Legion of Merit has been awarded to Lieut Col Leonard B Barnard, M C, A U S, of Oakland, Calif, for performing exceptionally meritorious services as assistant chief and later as chief of the orthopedic section of the surgical service, Woodrow Wilson General Hospital Staunton, Va, from March 1943 to February 1946 The citation stressed Colonel Barnard's outstanding professional skill in performing difficult operations, his effective training and supervision of his subordinates, and the consideration he showed for the hundreds of battle casualties under his care, which were largely responsible for the well-being and high morale among the patients and staff in the installation Dr Barnard graduated from Stanford University in 1927 and entered military service on Jan 11, 1943

Lieutenant Colonel Thomas Hale Ham

The Legion of Merit has been awarded to Lieut Col Thomas H Ham M C, A U S, of Boston The citation called attention to the breadth of scientific attainment displayed by Dr Ham as a member of the Medical Division Office, Chief of Chemical Warfare Service, from September 1943 to January 1946 His loyal devotion to duty and expert professional abilities contributed immeasurably to the successful achievement of the wartime mission of the Chemical Warfare Service Dr Ham graduated from Cornell University Medical College in 1931 and entered into the military service on Sept 4, 1943

Major Samuel P. Harbison

The Legion of Merit has been awarded to Major later Lieut Col, Samuel P Harbison M C, A U S, of Pittsburgh who served as chief, general surgery, 21st General Hospital in Africa, Italy and France from May 1943 to April 1945 The citation called attention to his unflagging energy, precise skill and keen scientific interest which enabled him to improvise equipment and improve technics with the result that many wounded personnel were saved from death or impairment Dr Harbison graduated from Cornell University Medical College in 1936 and entered the military service in January 1942

Major Manfred Guttmacher

The Legion of Merit was recently awarded to Major Manfred Guttmacher M C, A U S, of Baltimore, who as supervisor, Neuropsychiatry Consultants Division, Surgeon General's Office, from August 1944 to November 1945 rendered services of great value in preventive psychiatry and in the salvage of manpower The success of the army psychiatric work program was stated in the citation to have reflected his outstanding professional skill, clinical ability and sound judgment Dr Guttmacher graduated from Johns Hopkins University School of Medicine, Baltimore, in 1923 and entered the service Sept 30, 1942

Major Russell H. Barnes

The Bronze Star Medal was recently awarded to Major Russell H Barnes, M C, A U S, of Mansfield, Ohio The citation stated that as flight surgeon of the 320th Bombardment Group (M) and the 301st Bombardment Group (H) in North Africa Major Barnes performed meritorious service from November 1942 to May 1943, exhibiting outstanding professional knowledge sound judgment and unusual energy in rendering invaluable service although handicapped by physical suffering Dr Barnes graduated from the Hahnemann Medical College of Philadelphia in 1933 and entered the military service April 28, 1941

Major William J. Cromartie

The Legion of Merit has been awarded to Major William J Cromartie, M C, A U S, of McKinney, Texas, formerly of Nashville, Tenn, for performing exceptionally meritorious service as senior medical member of an intelligence mission in the European Theater of Operations from August 1944 to September 1945 The complete success of the mission, often under enemy fire, was attributed in the citation largely to his aggressive leadership, organizational ability, sound judgment and courage Dr Cromartie graduated from Emory University Medical School in 1937 and entered the military service Aug 11, 1942

Captain Charles W. Asbury

The Bronze Star Medal was recently awarded to Capt Charles W Asbury, M C, A U S, of Hamilton, Ohio, for meritorious achievement in connection with military operations from Feb 2, 1944 to June 8 1945 and in recognition of research work in the treatment of resistant dermatoses of the Southwest Pacific Area Dr Asbury graduated from the University of Cincinnati College of Medicine in 1942 and entered the service July 15, 1943

CORRECTIONS

Date of Entry into Service—The date of entry into the service of Lieut Col Harold R Hennessy as published in The Journal, February 1, page 330, should have been Nov 1, 1940

Award to Captain Saul Steinberg (0483911)—The award of the Army Commendation Ribbon to Capt Saul Steinberg, M C, A U S published in The Journal, January 4, page 47, was to Capt Saul Steinberg of Boston and not to Capt Saul Steinberg of Norristown Pa Captain Steinberg of Boston graduated from St Louis College of Physicians and Surgeons in 1926, he has been with the Boston Health Department since 1932 and in private practice in Boston since 1926 He entered the service in 1942 and was recently awarded also a Certificate of Commendation by the commanding general, Army Service Forces, 9th Service Command, War Department Personnel Center, Camp Beale, California, 'for strict attention to duty and performing his job in a superior manner as medical inspector from the period July 15 1945 to Feb 25, 1946

NAVY

SCHOOL OF AVIATION MEDICINE AND RESEARCH

Although the Naval School of Aviation Medicine has actually been in existence since 1939 and has trained about 1,400 doctors as flight surgeons and aviation medical examiners, it had never been officially designated as an activity until last October 15, when the Secretary of the Navy established the U. S. Naval School of Aviation Medicine and Research at the Naval Air Station, Pensacola, Fla. The school will continue to train young medical officers in aviation medicine and will continue its work in aviation medicine and research. Capt. Bruce V. Leamer (MC), U.S.N., has been named officer in charge.

LECTURE AT NAVAL MEDICAL CENTER

The fifth in a series of guest lectures at the Naval Medical Center, Bethesda, Md. sponsored by the Naval Medical School, was presented January 31 by Dr. Edward A. Strecker, chairman, Psychiatry Department, University of Pennsylvania Medical School, Philadelphia, on "Emotional Immaturity." Dr. Strecker is also consultant to the Surgeons General of the Army and Navy and special adviser to the Secretary of War. A cordial invitation to these lectures is extended to all physicians and medical officers in the District of Columbia and Montgomery County.

NEW ASSIGNMENTS

Rear Admiral Clarence J. Brown has been assigned as general inspector of the Medical Department and chief of the Research Division, succeeding Rear Admiral John Harper, who will become District Medical Officer for the 13th Naval District, with headquarters at Seattle.

Capt. Eric G. Hakansson has been appointed chief of the Research Division in the Bureau of Medicine and Surgery and will continue to be commanding officer of the Naval Medical Research Institute, Bethesda, Md.

Rear Admiral Carlton L. Andrus has been appointed Medical Officer in Command of the U. S. Naval Medical Center, Guam.

Rear Admiral John C. Adams formerly assistant chief of the Bureau of Aviation Medicine and Medical Military Specialties, has been appointed medical officer for the 5th Naval District, Norfolk, Va.

VETERANS ADMINISTRATION

HOSPITALS IN MEMPHIS

The management of the two veterans' hospitals in Memphis, Tenn., the Kennedy and the smaller hospital on Lamar Avenue, has been consolidated and Dr. Hugh L. Prather has been assigned as manager. Dr. Horace C. Dodge, formerly manager of the Lamar Avenue hospital, is reported to have retired at the beginning of the year after many years of service with the Veterans Administration.

WOMEN WAR VETERANS

Women veterans are entitled to the same medical care as male veterans, and in addition they may receive hospitalization for non-service connected disabilities in civil hospitals when government facilities are not available. Under present laws male veterans cannot secure hospitalization in private hospitals or treatment by private doctors at government expense for non-service connected ailments. This additional benefit is given women veterans as a result of an executive order issued in 1933, when only a few women veterans of World War I were eligible for Veterans Administration medical care. It was thought then to be more economical to authorize treatment and hospitalization for them from private physicians and in private hospitals than to construct special facilities in VA hospitals.

There were 1,339 women war veterans who were patients in VA hospitals, or in other hospitals under contract to VA on November 30, 1946, and in addition there were 212 women patients in VA homes. Of the total, 890 were veterans of World War II and the remainder veterans of World War I. The potential load of women war veterans is estimated at 350,000. The Veterans Administration has on its pension and compensation rolls at present 14,989 women veterans, of whom 1,456 are non-service connected.

PERSONAL

Dr. Harold F. Stolz, formerly of Saginaw, Mich., and Albuquerque, N. M., has assumed his duties in the department of medicine and surgery at the Veterans Administration Facility, Tucson, Ariz. From 1942 to 1945 he served as associate physician, cardiorespiratory diseases, Henry Ford Hospital, Detroit.

PUBLIC HEALTH SERVICE

PUBLIC HEALTH NURSING WEEK

A tribute will be paid to the services of the public health nurses of America in the observance of Public Health Nursing Week, April 20-26. The observance aims to spread the message that public health nursing services are for everybody and are not limited to those in lower income brackets; to encourage more nurses to enter the field of public health nursing; to interest more high school and college girls in choosing public health nursing as a career; to help relieve pressure on hospitals by calling attention to the fact that part time professional nursing care is available to people at home; to stimulate the development of organized health services in all areas of the United States, and to inform the people of the broad scope of the work done by the public health nursing services.

More than 20,000 public health nurses are employed in this country by local, state and national agencies. They work for health departments, boards of education and other official agencies and for nonofficial organizations such as tuberculosis associations, insurance companies, industries and visiting nurse associations. There is today one public health nurse to every 6,500 persons in the country. The U. S. Public Health Service in its announcement states that the country needs one public health nurse to each 2,000 of the population in order to render a complete public health nursing service, including bedside nursing in the home. This would require about 45,000 more than is now employed, based on the 1940 census.

Additional information may be secured from the Office of Health Information, Division of Public Health Methods, U. S. Public Health Service, 19th and Constitution Avenue N.W., Washington 25, D. C.

TEMPORARY ASSIGNMENT IN BOLIVIA

Senior Sanitary Engineer John J. Bloomfield, assistant chief, Industrial Hygiene Division, U. S. Public Health Service, has been assigned as special consultant to the Inter-American Affairs labor inspection and control program in Bolivia. He will remain there for two months to assist in the formulation of codes to establish healthful working conditions in industry and in the clarifying of occupational disease compensation laws. The institute, at the request of the Bolivian government, is setting up a program to improve the economic status of workers, particularly miners. Mr. Bloomfield will work with the institute's field party, which has been in Bolivia since 1945. He has been with the Public Health Service since 1923, and for thirteen years he pioneered in investigations of health hazards in industrial work.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education and public health.)

COLORADO

State Society Continues Annual Postgraduate Clinics.—The twelfth annual Midwinter Postgraduate Clinics of the Colorado State Medical Society will be held February 18-21 in Denver at the Shirley-Savoy Hotel. The clinics were suspended during the war years 1943-1945 and were revived in 1946. The first evening of the clinics proper is being given over to a nonscientific program featuring modern developments in the the problems of public relations of organized medicine. An innovation this year will be the technical exhibits.

FLORIDA

Personal.—Dr. Frank V. Chappell, Tampa, director of the Hillsborough County health department, was elected president of the Florida Public Health Association at its recent annual meeting. He succeeds Dr. George A. Dame, Fernandina.

Plane to Spray DDT.—At the request of the citizens of Fort Meyers the Army Air Forces sent a cargo plane fitted with DDT spray dispersal equipment to that area on January 25 to prevent fly breeding, after large numbers of dead fish were deposited by the tides on the beaches and in swamps. The War Department stated that the death of the fish was attributed to a minute sea organism. The plane was to spray the swamp area with a 20 per cent DDT solution in oil, and care was taken in the amount used in order to prevent injury to any form of wildlife.

GEORGIA

New Surgical Pavilion.—A new surgical pavilion in the Whitehead Memorial Room in Emory University Hospital, Atlanta, was dedicated recently. The pavilion was established by Mrs. Letitia P. Evans, Hot Springs, Va., mother of the late Conkey P. Whitehead, Atlanta. The dedicatory address was given by Dr. Alfred Blalock, professor of surgery, Johns Hopkins University School of Medicine, Baltimore.

School for Food Handlers.—Georgia established an educational program for food handlers, restaurant owners and operators, whereby three day food seminars were held last year at Atlanta, Savannah, Augusta, Columbus, Brunswick, Thomasville, LaGrange, Milledgeville, Hinesville, St. Simons and Jessup. There were 16,667 food handlers in attendance. According to the state health department numerous outbreaks of so-called food poisoning have occurred in Georgia as well as in some other states. The U. S. Public Health Service with mobile laboratories is said to have examined 50,000 utensils from 5,400 eating places in 156 American cities and found only 28 per cent free from dangerous numbers of bacteria. One bacteriologist, it is said, examined 54 samples of dish water from typical restaurants and found greater contamination than exists in the average sewer. The federal health agency warns that the amount of disease spread in restaurants is increasing.

ILLINOIS

Resolution of County Society.—The Adams County Medical Society has disapproved the present administration policies of the Blessing Hospital in Quincy, particularly as they are said to apply to the infringement on the private practice of medicine. The society in its resolution pointed out that plans are being made by this hospital to employ full time medical specialists on a salary basis and to sell their services to the patients in the hospital as well as to the general public.

Chicago

Industrial Tuberculosis Survey.—The Tuberculosis Institute of Chicago and Cook County reported February 1 that 13 active cases of tuberculosis and 77 suspected cases were disclosed by recent chest examinations of 5,298 employees in a Chicago manufacturing plant. Dr. Earl E. Kleinschmidt, director of the institute, said that none of the persons found to be infected were aware of the disease.

Hospital Staff Honors Colleague.—A bronze plaque honoring the long service of Dr. Mark T. Goldstine, a member of Wesley Memorial Hospital staff since 1902, was unveiled January 25 at ceremonies at the hospital. He is professor emeritus of gynecology and obstetrics at Northwestern University Medical School and chairman emeritus of the same department at the hospital as well as director of the Davella Mills Foundation Cancer Clinic.

Personal.—Dr. Camillo E. Volini has been appointed superintendent of clinics for the Municipal Tuberculosis Sanitarium, succeeding the late Dr. Edward P. Troy. Dr. Volini has been on the sanitarium staff for many years and since 1940 has been director of field collapse therapy.——Dr. A. C. Ivy, vice president, University of Illinois School of Medicine, Chicago, left early in January for Nuremberg, Germany, to serve as an expert witness and adviser at the trials of Nazi doctors charged with crimes of a medical nature and returned to Chicago, January 28.——Dr. William F. Petersen, University of Illinois College of Medicine, has been appointed director of the newly created department of clinical research at St. Luke's Hospital. ——Dr. John I. Perl, who for several years has been interested in painting as a hobby, has an exhibit at 111 East Delaware Street, which will continue until February 16.

The Third Annual Clinical Conference.—The Chicago Medical Society will hold its third annual clinical conference March 4-7 at the Palmer House. This intensive postgraduate course for the general practitioner will be presented by well known speakers, many from various cities in the United States. Among the subjects included in the morning and afternoon lectures, beginning at 8:30 and 2 o'clock respectively, are the surgical treatment of prostatic disease, causes and treatment of exophthalmos, diagnosis and treatment of the more common types of industrial dermatitis, surgical problems in diabetes mellitus, carcinoma of the uterus, chronic brucellosis, functional disorders of digestion, psychology and the general practitioner and psychosomatic gynecology. In addition there will be three panel discussions, a clinicopathologic conference and round table discussions at each luncheon.

INDIANA

Scholarships for Rural Medicine.—The Indiana State Medical Association is offering six or more scholarships each year for young men and women who wish to study medicine and practice in Indiana. Students who accept the scholarships must agree to be available for private practice in those counties "in which, in the opinion of the committee, medical service is most urgently needed." Principal cost of the scholarships will be borne out of funds appropriated by the council of the association. The scholarship committee is also authorized to accept donations from other sources. The medical association hopes thus to help meet the shortage of physicians in rural areas of the state. Dr. Alfred Ellison, South Bend, is chairman of the medical association council.

KANSAS

Health Officers' Conference.—The Kansas Local Health Officers' Conference was held January 9-10 in Lawrence, Dr. W. Fred Mayes, Topeka, director of local health administration, Kansas State Board of Health, presiding. The afternoon program was devoted to a discussion of the relationship of state consultant nurses to the local health departments, evaluation of nursing personnel and orientation of new nurses.

MASSACHUSETTS

Personal.—Dr. Hugo Muench, former member of the International Health division of the Rockefeller Foundation, and professor of biostatistics at Harvard University School of Public Health, has been appointed head of the department of biostatistics. He is also assistant dean.

Epidemic Among Infants.—Eight infants stricken with diarrhea have died at Cambridge City Hospital in an outbreak of 23 cases reported between December 4 and January 1. Of that number 7 were in Cahill House and 16 in the children's ward of the main building. All babies affected were under 10 months of age, according to Dr. George B. Foster, medical director of the hospital. Earlier a similar outbreak took the lives of 4 infants at Framingham Union Hospital, Framingham, June 2-15. An outbreak at Worcester City Hospital in October was responsible for the deaths of at least 10 babies before it ended in November. The State Department of Public Health is reported to be making an extensive investigation to determine the cause, Dr. Roy F. Feemster, director of the division of communicable diseases, said. The staff of Cambridge City Hospital was commended for efficiency in dealing with the crisis.

Appointments to the Teaching Staff at Harvard.—Recent appointments to the teaching staff at Harvard Medical School, Boston, include:

Dr. Robert E. Gross, Framingham, William E. Ladd professor of child surgery and head of the department of surgery at Children's Hospital.

Dr. William T. Green, Belmont, clinical professor of orthopedic surgery and director of orthopedic surgery at Children's Hospital.

Dr. Joseph S. Barr, Newton, clinical professor of orthopedic surgery and director of orthopedic surgery at Massachusetts General Hospital.

Dr. Charles A. Janeway, Weston, Thomas M. Rotch professor of pediatrics and head of the department of pediatrics at Children's Hospital.

Dr. Donald R. Wilson, Outremont, Quebec, research fellow in medicine.

Dr. Jacques A. Carlotti, Paris, France, research fellow in medicine.

Dr. Wade Volwiler, Athens, Ohio, assistant in medicine.

Dr. Louis A. Sieracki, Norwood, Mass., instructor in pediatrics.

Dr. Bertram Selverstone, Norfolk, Va., assistant in surgery.

Dr. Frederic C. Bartter, Boston, research fellow in medicine.

Dr. Thomas Lanier DeLorme, Randolph, Mass., research fellow in neurology.

Dr. Gardner Cowles Quarton, Cedar Rapids, Iowa, assistant in neurology.

Dr. Gustave Derouaux, Liége, Belgium, research fellow in physical chemistry.

Dr. Constance E. Field, London, research fellow in pediatrics.

Dr. Theodore Dunham Jr., Pasadena, Calif., Henry E. Warren fellow in surgery.

Martin Bernard Williamson, Ph.D., Las Vegas, N. M., instructor in ophthalmic research.

Dr. Sidney B. Luria, Waterbury, Conn., assistant in surgery.

Dr Ralph Henderson Kellogg, Saratoga Springs, N. Y., teaching fellow in physiology.

MICHIGAN

Grant for Research.—The United States Public Health Service has awarded Wayne University College of Medicine a grant of $10,000 in support of research on "The Pharmacology of Synoptic Function" to be carried on in the department of pharmacology and therapeutics under the direction of Dr. Amedeo S. Marrazzi, professor and head of the department.

Lecture by Charles Best.—Dr. Charles H. Best, Toronto, co-discoverer of insulin, was the speaker at a joint meeting of the Detroit Physiological Society and the Wayne University (Detroit) chapter of Sigma Xi, national honorary scientific society, February 4. Dr. Best discussed the agents which affect the metabolism of fat and their relation to the protection of the liver and the kidneys.

Secretaries and Public Relations Conference.—The Annual County Secretaries and Public Relations Conference of the Michigan State Medical Society was held February 2 in Detroit, with Dr. Gilbert B. Saltonstall, Charlevoix, acting as chairman. Dr. Creighton Barker, New Haven, secretary, Connecticut State Medical Society, opened the session with a discussion of public responsibilities of medical societies. The after dinner speaker was Governor Kim Sigler.

County Society Honors Veteran Members.—Houghton-Baraga-Keweenaw County Medical Society honored members of the society who have been practicing medicine forty years or more at a dinner recently. They are Drs. Addison D. Aldrich and Simon Levin, Houghton; James B. Quick, Laurium; William T. S. Gregg, Philip D. Bourland, Job R. W. Kirton, James C. Abrams and Andrew C. Roche, Calumet; George F. Brewington, Mohawk; Percy H. Wilson, Chassell; Melvin D. Roberts and Roy C. Whitmore, Hancock. Dr. Alfred LaBine, Detroit, presided.

Dr. McIntyre Goes to California.—Dr. Charles H. McIntyre, Kalamazoo, has accepted the position of chief of surgical service at the Veterans Administration hospital, Los Angeles, effective March 1. Dr. McIntyre, a graduate of the University of Michigan Medical School in 1931, was an instructor in the surgical department at University Hospital, Ann Arbor, before coming to Kalamazoo in 1936. He served in the navy in the Pacific areas during the recent war, attaining the rank of commander, and resumed his practice in Kalamazoo in January 1946. He is a specialist certified by the American Board of Surgery and was on the visiting staff of Borgess (Kalamazoo), Bronson Methodist (Kalamazoo), Sturgis Memorial (Sturgis) and Pennock (Hastings) hospitals.

MINNESOTA

Anniversary of Health Association.—Among the speakers at the recent celebration of the fortieth anniversary of the Minnesota Public Health Association were Drs. Lewis S. Jordan, Granite Falls, president, and William A. O'Brien, University of Minnesota Medical School, Minneapolis, director of postgraduate medical education and professor of preventive medicine and public health.

Sentenced for Crime of Abortion.—The Minnesota State Board of Medical Examiners reports that on Dec. 28, 1946, Clara O. Anderson, 48, 1142 Emerson Avenue North, Minneapolis, was sentenced to a term of three years at hard labor in the Woman's Reformatory at Shakopee by Hon. Levi M. Hall, judge of the district court of Hennepin County. The defendant had pleaded guilty to an information charging her with the crime of abortion and also with having had a conviction for similar offenses in 1943. On the same date Irene E. MacFarland, 46, 1514 Sixth Street North, Minneapolis, and Isadore Abramovich, 24, 706 Elwood Avenue North, Minneapolis, entered pleas of guilty to an information charging them with the crime of abortion in the same case with defendant Anderson. Judge Hall sentenced defendant MacFarland to one year in the Minneapolis Woman's Detention Home, suspended the sentence and placed the defendant on probation. Abramovich was sentenced to a one year term in the Minneapolis Work House, the sentence being suspended and the defendant placed on probation. None of the defendants are licensed to practice any form of healing in the state of Minnesota.

NEBRASKA

Tuberculosis Survey in Seventy-Three Locations.—From November 1945 to November 1946 a total of 41,263 4 by 5 free chest x-rays were taken in seventy-three different locations. Of these, 208 cases, or 5 per cent, showed persons to be sources for the spread of tuberculosis, and 470, or 1.1 per cent, were classified as suspected cases. There are 291 persons in hospitals or under the care of a private physician as a result of the survey. Fifty-seven counties have requested that the mobile unit of the state health department visit their communities.

Seminar on Poliomyelitis.—An intensive three day course of instruction for a selected number of physicians of the state was given January 9-11 by the National Foundation for Infantile Paralysis, the University of Nebraska College of Medicine and Creighton University College of Medicine. The course covered all phases of poliomyelitis, including early diagnosis, differential diagnosis, physical therapy, occupational therapy and the various aspects of convalescent care. One physician was selected by each of the councilors of the Nebraska State Medical Association with the expectation that each attending physician would return to his local medical group and report new developments.

NEW YORK

Richard Lyons Joins Syracuse University Staff.—The appointment of Dr. Richard H. Lyons as the Edward C. Reifenstein professor of medicine at Syracuse University College of Medicine, Syracuse, has been announced by Dr. H. G. Weiskotten, dean. Dr. Lyons, who is now associate professor of medicine at the University of Michigan School of Medicine, Ann Arbor, will assume his responsibilities at Syracuse this coming June. He is particularly well known for a series of papers on the development of a drug called "tetraethyl ammonium" helpful in vascular disease of the extremity, associated with poor blood flow.

Ward Helpers.—At a conference in December of leaders of District 1, New York State Nurses Association, of the Western New York Hospital Council and of professional nurse representatives of fourteen hospitals in the area, plans to introduce a ward helper program in western New York hospitals were completed. Harold A. Grimm, superintendent of Millard Fillmore Hospital, Buffalo, presided. Since there is no immediate hope of correcting the shortage of professional nurses in western New York institutions, ward helpers will be assigned to nursing departments in the hospitals to perform largely housekeeping duties, particularly in hospital wards, and to assist with some of the simpler procedures concerned with personal care of patients. They will be paid $90 a month during an apprenticeship and $100 when qualified for permanent employment. Interested women are urged to apply.

New York City

New Foundation for Research on Hypertension.—A gift of $1,000,000 to Beth Israel Hospital for a new foundation for medical research on hypertension has been established by Mr. and Mrs. Joseph Levy and will be known as the "Joseph and Helen Yeamans Levy Foundation, established in memory of their daughter Miriam Levy Finn." Dr. Arthur M. Fishberg, Beth Israel physician in chief and director of medical service, will serve the foundation as director. One objective of the foundation will be to furnish opportunities to young physicians and scientists.

Director of Laboratories Appointed.—Dr. Ward H. Cook, for seventeen years director of Bureau of Laboratories of the city of Yonkers, has been appointed to direct the laboratories at the Long Island College Hospital, Brooklyn, when the expansion program of the hospital, now under way, has been completed. Previously he taught pathology at Harvard Medical School, Boston, was assistant professor of bacteriology at the University of Pittsburgh and professor of pathology at the Medical College of Virginia, Richmond. He has also been pathologist to the New York Post-Graduate Medical School and Hospital, New York City.

Ten Cancer Detection Centers to Open at Once.—Fourteen new centers for the detection of cancer will be opened in the city. A grant of $187,835 is the first of a series to be provided by the New York City Cancer Committee, it was announced by General John R. Kilpatrick, chairman, board of managers, and Dr. John C. A. Gerster, chairman of the medical committee. The first ten centers will be opened at once, and negotiations are in progress for the remaining four. "These fourteen centers," said General Kilpatrick, "are the result of demands made on present cancer detection facilities. Their purpose is to provide a place for any one apparently well and without symptoms to go to make sure that he is free from the threat of cancer." The service will be provided at a moderate fee and if necessary the patient will be referred to his physician for treatment. Seven of the ten cancer centers are located in voluntary institutions which will receive appropriations totaling $57,995: Lennox Hill Hospital, Hospital for Joint Disease, New York University School of Medicine, Beekman-Downtown Hospital, Beth David and Staten Island hospitals and St. Vincent's Hospital in Staten Island. Three centers will be opened in connection with city hospitals and a welfare center, their appropriation totaling $21,640: Harlem Hospital, Welfare Island Dispensary and Kips Bay-Yorkville Health Center. The committee has also made three special grants for the extension of cancer facilities: Memorial Hospital $20,000 for additional personnel, Postgraduate Hospital $9,400 and Roosevelt Hospital $3,000. General Kilpatrick says the grants were the first of a series for medical service, education and research in the fight against cancer.

OHIO

Upholds Conviction on Abortion Charge.—The Ohio Supreme Court has upheld the conviction of Dr. Lloyd L. Jones, Columbus, in Franklin County Criminal Court on six counts of abortion. He must serve from six to forty-two years in Ohio Penitentiary. The Ohio court refused to review an appeal of his case from the district court of appeals, which had affirmed Dr. Jones's conviction in criminal court.

Industrial Hygiene Service.—New regulations for the prevention and control of industrial diseases went into effect January 1. They specify the maximum permissible amount on an eight hour exposure to sixty-two dusts, fumes, gases, mists and vapors to which workers can be exposed during employment. The regulations are being administered by the division of industrial hygiene, Ohio Department of Health. Since the work is primarily a service to industry and labor, it will function largely on a basis of requests from individual industries, labor organizations, health officers and physicians.

Society of General Physicians.—The general physicians of greater Cincinnati have formed a new organization called the Society of General Physicians, which is a federation of eleven member sections. The organization is dedicated to the advancement of the practice of general medicine and the realization of these purposes: 1. To define the functions of the practice of general medicine. 2. To promote the inclusion of general physicians in programs of postgraduate training. 3. To secure for general physicians in their hospitals the right to practice (in accordance with their ability and training) those arts and technics that lie within the scope of general medicine; the inclusion of general physicians as such, in their active medical staffs, and the right to vote and hold office in their medical staffs. Any physician who is an active member of the Academy of Medicine of Cincinnati, or who would be eligible for membership in the academy except for the fact that he does not reside in Hamilton County, Ohio, is eligible for membership in this society, the officers of which are Dr. Harry R. Mendelsohn, president, and Dr. F. William Vockell, 301 West McMillan Street, Cincinnati, secretary-treasurer.

PENNSYLVANIA

Special Course in Psychiatry.—A special three weeks' course in psychiatry is being conducted at the Warren State Hospital, Warren, by Dr. Milton H. Erickson, professor of psychiatry, Wayne University College of Medicine, Detroit, and Director of Psychiatric Research and Training, Eloise Hospital, Eloise, Mich. The course is being attended by members of other state institutions in Pennsylvania.

TEXAS

El Paso Medical Center.—A new medical center will be completed in El Paso early this year to meet the needs of the community, ten counties in west Texas, bordering counties in Arizona and New Mexico and the adjacent state of Chihuahua, Mexico. The $2,000,000 general hospital and adjacent nurses' residence and training school, to be known as Providence Memorial Hospital, will replace the existing Providence Memorial Hospital and will be held and operated in trust by a group of citizens who will serve as a board of trustees. The location of the medical center in El Paso was recommended by the U. S. Public Health Service and by the Texas Hospital Service. It will raise in the area the ratio of hospital beds from 2.08 per thousand to minimum standards of 4.5.

Dallas Southern Clinical Conference.—The annual spring conference of the Dallas Southern Clinical Society, March 17-20 in Dallas, will be held at the Adolphus and Baker hotels. The program has been planned to give the general practitioner and the specialist practical teaching. Guest speakers include Drs. Elmer Belt, Los Angeles, urology; William K. Boyd, Toronto, pathology; Franklin D. Dickson, Kansas City, orthopedic surgery; F. Bruce Fralick, Ann Arbor, Mich., ophthalmology; Leo H. Garland, San Francisco, radiology; George H. Humphreys, New York, surgery; John R. Lindsay, Chicago, otolaryngology; Perrin H. Long, Baltimore, preventive medicine; Henry G. Poncher, Chicago, pediatrics; Isadore S. Ravdin, Philadelphia, surgery; Ralph A. Reis, Chicago, obstetrics and gynecology; Newton D. Smith, Rochester, Minn., proctology; Williard O. Thompson, Chicago, medicine; John C. Whitehorn, Baltimore, neuropsychiatry, and Julius L. Wilson, New Orleans, medicine.

WASHINGTON

Hospital and University Affiliate.—The board of trustees of King County Hospital and the board of regents of the University of Washington have agreed to an affiliation between the school of medicine of the university and the King County hospital system. The staff of the hospital has been reorganized so that the early clinical teaching program of the medical school may be developed along both the undergraduate and the graduate program.

Spokane County Society Assisted Their Medical Veterans.—A plan was devised in Spokane in January 1942 to assist members of the Spokane County Medical Society who would enter the military service. Doctors who were commissioned as first lieutenants in the army, or the equivalent in other branches of the service, would have their income raised to that of a captain, thus providing them an extra $34, with an additional $10 for each dependent. All contributions to the Medical Officers' Beneficial Fund were voluntary; they continued throughout the war, and 87 per cent of the members contributed from $10 to $25 a month. A total of $66,027.50 was contributed by 134 members of the county society. As this amount exceeded the sum needed for the original purpose, it was decided to give also to each member who entered the service $150 for each period of six months he was away. These payments were made when the veterans were released from the service in order to help them resume civil practice. It was available, however, at any time during the war in case an emergency arose for the individual. Fifty doctors benefited from the fund, the smallest amount received by any one veteran having been $330 and the largest amount $2,334.16. Payments were made whether or not the veterans resumed practice in Spokane. Two wives of men who died in the service received payments from the time of the husband's entry until Sept. 1, 1946. Marjorie Weber, secretary to the Medical Officers' Beneficial Fund, writes that the final payments have just been made and that the books of the fund have been closed.

WEST VIRGINIA

Lifetime Memberships.—The council of the West Virginia State Medical Association has elected the following doctors to honorary lifetime membership: Drs. Oscar O. Eakle and Homer S. Brown, Sutton; Leonard W. Deeds, Buckhannon; G. M. Burton and Samuel H. Burton, Weston; James B. Dodrill, Webster Springs; Homer O. Van Tromp, French Creek; Charles B. Rohr, Alum Bridge, and S. H. Post, Clarksburg.

School Health Education. — A questionnaire entitled "Inventory of Secondary School Health Education Program in West Virginia" has been prepared and mailed to all principals of high schools in West Virginia. The committee submitting the inventory is composed of Miss Katherine Steinbicker, state consultant for the community health service project, department of education, Mrs. Grayce Hoke, Mr. A. J.

Gibson and Mr. L. K. Lovenstein. The replies to the questionnaire will be used in setting up comprehensive objectives and in implementing a health education program to meet the needs and interest of high school students in the state.

Cancer Information Centers.—West Virginia's first cancer information center has been opened at 207 Bradford Street in Charleston. It is being financed from funds collected in the annual cancer drive of the American Cancer Society. The center is open to the public each weekday from 9 until 5. Literature is being distributed, and information is available to persons interested in cancer control. Applications of needy cancer patients for financial aid through the division of cancer control are handled by Mrs. Frances Meyer, who is in charge of the center and who attends the two tumor clinics in Charleston. Plans are being completed for the opening of an information center at 77 Twelfth Street, Wheeling, with Miss Virginia Ewing, a graduate in social service from Wooster University, in charge. A third center will be opened in Clarksburg early in the spring.

GENERAL

Eye Bank Grants Fellowship.—The Eye Bank for Sight Restoration, Inc., has announced that the first international fellowship to be granted by the eye bank is to be awarded to an ophthalmologist of the Hebrew University in Palestine in ophthalmology and research work under the direction and supervision of the Wilmer Institute of Johns Hopkins University, Baltimore.

Infantile Paralysis Research Meeting.—Scientists and physicians engaged in infantile paralysis research recently conferred in Chicago on setting up standard practices and methods for use of curare in relieving muscle spasms at the acute stage of poliomyelitis. Harry M. Weaver, Ph.D., director of research, National Foundation for Infantile Paralysis, which sponsored the meeting, presided.

Norton Award to Dr. Bernheim.—The $3,500 Norton Medical Award for 1947 has been made to Dr. Bertram M. Bernheim, Baltimore, for his book "A Surgeon's Domain." The award is made for the best book by a professional man written for the layman. Dr. Bernheim is associate professor of surgery at the Johns Hopkins Medical School, Baltimore, and visiting surgeon to the Johns Hopkins Hospital.

Warning of Impostor.—Brooks Mendell, New York, is visiting various research and treatment centers in the United States representing himself as an authorized agent of the National Foundation for Infantile Paralysis. Dr. Hart E. Van Riper, medical director of the foundation, advises that Mendell has no connection with the National Foundation for Infantile Paralysis, nor has he been authorized to contact any institution or laboratory where work is in progress under a grant from the foundation.

Pan American Congress of Ophthalmology.—The third Pan American Congress of Ophthalmology will be held in Havana, Cuba, Feb. 23-28, 1948. Papers should be in the hands of the committee by February 23 for official subjects. No program changes can be made after August 23. Papers should be accompanied by an official summary of 300 to 500 words for the official subjects and from 200 to 300 words in the free communications. Those who wish to attend the congress should send their names to Dr. Tomas R. Yanes, P. O. Box 970, Havana, Cuba.

Research Fellowship Awarded.—The first of the American College of Physicians Research fellowships for 1947-1948 has been awarded Dr. Thomas F. Paine Jr., Cambridge, Mass., who will continue studies of infectious diseases with special reference to chemotherapy and the use of antibiotics at the Thorndike Memorial Laboratory, Boston City Hospital. Dr. Paine is a graduate of Vanderbilt University School of Medicine, Nashville, 1942, interned at Strong Memorial Hospital, Rochester, N. Y., and during his service in the Army of the United States participated in clinical and laboratory studies of infectious diseases.

Unprecedented Turnover in Deanships.—The *Diplomate* for December 1946 reports that since the 1945 annual meeting of the Association of American Medical Colleges an unprecedented turnover has occurred in deanships, three resulting from deaths and twenty due to resignation or retirement. Nineteen new deans have been appointed. Three schools are without a dean and are seeking men to fill the vacancies. One dean will retire as soon as a successor is found. When these positions are filled there will have been twenty-three new deans since October 1945. Since there are only seventy-eight medical schools in the United States and ten in Canada, this is a 25 per cent turnover.

Applications for Aid for Research in Sex Problems.—Applications to the National Research Council Committee for Research in Problems of Sex for financial aid during the fiscal year beginning July 1, for work on fundamental problems of sex and reproduction, should be received not later than April 1. They may be addressed to the chairman, Robert M. Yerkes, Ph.D., Yale School of Medicine, New Haven 11, Conn. Although hormonal investigations continue to command the interest and support of the committee, preference, in accordance with current policy, will ordinarily be given to proposals for the investigation of neurologic, psychobiologic and behavioral problems of sex and reproduction.

Aid for Superior Students.—The Walter Joseph Meek Fund has recently been established for students of the University of Wisconsin Medical School, Madison, by Dr. Anton J. Carlson, Frank P. Hixan distinguished service professor emeritus of physiology at the University of Chicago, a former pupil, in recognition of Dr. Meek's superior performance in teaching research and public service. The fund is intended for superior and financially needy students in the medical sciences. Dr. Carlson contributed $400. Dr. Paul Hodges, professor of roentgenology at the University of Chicago, contributed an additional $100. It is expected that this fund will increase with donations from former students and colleagues of Dr. Meek.

Training Conferences on Poliomyelitis.—Area staff training conferences on the subject of poliomyelitis are being sponsored by the American Red Cross. The Midwestern Area conference met January 23-24 in St. Louis, the Pacific Area in San Francisco January 27-28, and the Southeastern Area at Atlanta, Ga., February 10-11. Other conferences planned are for the Eastern Area at Alexandria, Va., February 26-27; North Atlantic Area at New York City, April 2-3. The purpose of each meeting is to prepare staff nurses to judge nursing needs in poliomyelitis outbreaks, to bring them up to date on procedures and available facilities and to discuss problems encountered in nurse recruitment and assignment. Representatives of the National Foundation for Infantile Paralysis and the Children's Bureau will be present at each meeting.

Lost or Stolen Narcotic Order Forms.—The Office of the Commissioner of Narcotics, Washington 25, D. C., has again announced the numbers of those order forms for opium and other narcotics which have been reported and are probably in the hands of persons not entitled to them. These numbers are in addition to the order forms reported lost in narcotic circular *283, July 9, 1946. Wholesale dealers in narcotics,* importers and manufacturers are warned not to fill any order form on which any of the numbers reported appear or any form listed in circular *283* (except numbers A312167-170, R132381-390 and R568761-770, all inclusive, which have been found). Any order form presented on which the serial number is listed in these two circulars should be forwarded to the Office of the Commissioner of Narcotics at once.

Deaths in Other Countries

Sir Edward Thornton, formerly secretary for public health and chief health officer for the Union of South Africa and D. G. M. S. of the Union Defense Forces with rank of brigadier, died Oct. 26, 1946, aged 68.——**Dr. Gonzálo Castañeda,** dean of the National Academy of Medicine, Mexico City, died recently, aged 78.——**Dr. Charles Fenwick Wilde,** former physician at Montreal General Hospital, Montreal, Que., and administrator in medicine at McGill University, died Nov. 24, 1946, aged 80.——**Sir William J. Collins,** former vice chancellor of London University, consulting surgeon at Royal Eye Hospital, died Dec. 12, 1946 in London.

Marriages

William Somers Reynolds Jr., Wetumpka, Ala., to Miss Jean Vaughan Ferebee of Norfolk, Va., in October.

Stanley Willard Wright, Berkeley, Calif., to Dr. Phyllis Richman Mann of New York November 16.

Victor Hill Klein Jr., Knoxville, Tenn., to Miss Frances Lathan Perkins at Memphis recently.

DeArmond Moore, Charlotte, N. C., to Miss Leona Rose Olander of Pittsburgh October 8.

Otto A. Miller, Ashland, Pa., to Miss Pearl Zimmerman of Buck Run in September.

Wesley M. Page, Bedford, Iowa, to Miss Betty Jane Thomas of Iowa City September 27.

Deaths

John Favill ⊕ Chicago; born in Madison, Wis., on Sept. 9, 1886; Harvard Medical School, Boston, 1913; professor of neurology at the University of Illinois College of Medicine; interned at the Massachusetts General Hospital in Boston; specialist certified by the American Board of Psychiatry and Neurology; for many years on the faculty of Rush Medical College; fellow of the American College of Physicians, American Psychiatric Association, American Association for the Advancement of Science and the Institute of Medicine of Chicago; member of the Society of Medical History of Chicago, Chicago Society of Internal Medicine, Chicago Academy of Criminology, American Neurological Association, serving at one time as its vice president, Illinois Psychiatric Society, Association for Research in Nervous and Mental Diseases, Association for the Study of Internal Secretions, Illinois Society for Mental Hygiene, National Committee on Maternal Health, Illinois Birth Control League, National Medical Committee on Federal and State Contraceptive Legislation, National Medical Council on Birth Control, National Committee on Planned Parenthood, Birth Control Federation of America and many others; member and past president of the Chicago Society for Personality Study, Chicago Neurological Society and Central Neuropsychiatric Association; served with the American Expeditionary Forces in France during World War I; colonel, medical reserve corps, not on active duty; served in various capacities on the staffs of the Central Free Dispensary, Illinois Institute for Juvenile Research, Institute for Psychoanalysis, St. Luke's, Cook County, St. Elizabeth, Highland Park (Ill.), and the Presbyterian hospitals; author of "Outline of the Cranial Nerves," "Primer of Celestial Navigation" and others; trustee of the Rogers Memorial Sanitarium in Oconomowoc, Wis., and Elizabeth McCormick Memorial Fund; died at his home in Winnetka, Ill., Dec. 21, 1946, aged 60, of coronary thrombosis.

George Andrew Chapman ⊕ Glen Falls, N. Y.; Baltimore Medical College, 1897; past president of the Medical Society of the State of New York and the Warren County Medical Society; veteran of the Spanish-American War; member of the American Public Health Association, American Association for the Advancement of Science, American Congress of Internal Medicine, New York State Society of Internal Medicine and the Sanitary Officer Association of State of New York; fellow of the American College of Physicians; for many years health officer of Queensbury; affiliated with the Glen Falls Hospital; died Dec. 16, 1946, aged 75, of uremia.

Ernest Dwight Chipman ⊕ San Francisco; Yale University School of Medicine, New Haven, 1897; an Affiliate Fellow of the American Medical Association; specialist certified by the American Board of Dermatology; member and formerly vice president of the American Dermatological Association; member of the House of Delegates of the American Medical Association in 1915 and 1916 and chairman, Section on Dermatology and Syphilology, 1921-1922; served on the staffs of the Mary's Help Hospital, French Hospital and the Franklin Hospital; died Dec. 4, 1946, aged 71, of Parkinson's disease.

Robert Louis Lee, Kansas City, Kan.; University of Kansas School of Medicine, Kansas City, 1929; member of the American Medical Association; interned at the New Charleston General Hospital and Training School in Charleston, W. Va.; began active duty as a captain in the medical reserve corps of the U. S. Army in March 1941; promoted to major; served overseas; released from active duty on June 20, 1945; secretary of the Bethany Hospital staff; surgeon for the Atchison, Topeka and Santa Fe Railroad; died Nov. 28, 1946, aged 43, of coronary occlusion.

A. Bennett Cooke, Los Angeles; Vanderbilt University School of Medicine, Nashville, Tenn., 1891; clinical professor of surgery at the College of Medical Evangelists; formerly on the faculty of his alma mater; member of the American Medical Association, serving as a member of its House of Delegates in 1911, 1912 and 1913 and Judicial Council from 1911 to 1918; fellow of the American College of Surgeons; on the staffs of the Los Angeles County Hospital, Presbyterian Hospital-Olmsted Memorial, California and Methodist hospitals; died Dec. 9, 1946, aged 79.

Leon James Barber ⊕ Patchogue, N. Y.; University of Vermont College of Medicine, Burlington, 1913; served during World War I; on the staff of the John T. Mather Memorial Hospital in Port Jefferson; died Dec. 23, 1946, aged 58.

George Evans Beatty, Brooklyn; Long Island College Hospital, Brooklyn, 1912; served on the staffs of the Norwegian, Caledonian and Prospect Heights hospitals; died Dec. 16, 1946, aged 58, of heart disease.

Eli Thomas Brand, Wilmette, Ill.; Washington University School of Medicine, St. Louis, 1908; died Dec. 23, 1946, aged 63, of chronic myocarditis.

Frank T. Brigham, Watkins, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1905; member of the American Medical Association; died in Rochester recently, aged 66, of bronchopneumonia and carcinoma of the prostate.

Hugh Ria Brownlee, Cleveland; University of Buffalo School of Medicine, 1900; on the staff of the Huron Road Hospital in East Cleveland, where he died Dec. 5, 1946, aged 76, of coronary thrombosis.

Sherman Moran Burns ⊕ Oswego, N. Y.; Syracuse University College of Medicine, 1920; fellow of the American College of Surgeons; specialist certified by the American Board of Surgery; president of the Fifth District Branch of the Medical Society of the State of New York; on the staff of the City Hospital; died Dec. 15, 1946, aged 54, of coronary thrombosis.

Foster Kendrick Camp, Pasadena, Calif.; Dearborn Medical College, Chicago, 1906; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; died Dec. 4, 1946, aged 72, of intestinal obstruction.

Ernest Marion Carson, Rembert, S. C.; Medical College of the State of South Carolina, Charleston, 1905; died Dec. 2, 1946, aged 67.

Archie Leonard Clayton, Fort Payne, Ala.; Chattanooga (Tenn.) Medical College, 1905; found dead Dec. 8, 1946, aged 74.

Henry L. Cody, St. Louis; St. Louis College of Physicians and Surgeons, 1898; also a graduate in pharmacy; died January 14, aged 73, of angina pectoris.

Waller Glenmore Combs, Kirksville, Ky.; University of Louisville Medical Department, 1906; served during World War I; died Dec. 8, 1946, aged 63, of heart disease.

Robert Houk Cox, Murphy, N. C.; University of Tennessee College of Medicine, Memphis, 1940; interned at St. Joseph's Hospital in Memphis; member of the American Medical Association; member of the staff of the Petrie Hospital; died Dec. 7, 1946, aged 33, of skull fracture received when he fell from a ladder while trying to escape from a fire in the Winecoff Hotel in Atlanta, Ga.

Homer Winfield Crane ⊕ Berkeley, Calif.; Cooper Medical College, San Francisco, 1909; major, medical reserve corps, not on active duty; member of the staff of the Alta Bates Hospital; died Dec. 19, 1946, aged 65.

George L. Cremeens, Springerton, Ill.; Keokuk (Iowa) Medical College, 1895; member of the American Medical Association; served as village president; died Dec. 22, 1946, aged 78.

Joseph M. Croman Sr. ⊕ Mount Clemens, Mich.; Detroit College of Medicine, 1892; served as police commissioner and as county physician; on the staff of St. Joseph Sanitarium and Hospital, where he died Dec. 10, 1946, aged 81, of coronary thrombosis.

Deborah Vivian Rubenstein Dauber ⊕ Chicago; Boston University School of Medicine, 1938; diplomate of the National Board of Medical Examiners; interned at the Mount Sinai Hospital in Cleveland; interned and served a residency at the Michael Reese Hospital, where she was a member of the cardiovascular research division and where she died Nov. 21, 1946, aged 32, of injuries received when struck by an automobile.

Domnick Patrick Dempsey ⊕ Kellogg, Minn.; John A. Creighton Medical College, Omaha, 1906; member of the American Medical Association; died in St. Mary's Hospital, Rochester, Nov. 30, 1946, aged 76, of fracture of the left hip received in a fall and arteriosclerosis.

Thomas Claude Donald ⊕ Birmingham, Ala.; Medical College of Alabama, Mobile, 1897; president of the board of education of the city schools of Bessemer, Ala., from 1920 to 1925; member of the Southern Medical Association; on the staff of Baptist Hospital; died Dec. 5, 1946, aged 70, of cardiovascular disease.

Henry Beaman Douglass, East Boothbay, Maine; College of Physicians and Surgeons, medical department of Columbia College, New York, 1886; member of the American Medical Association, Medical Society of the State of New York and the American Laryngological, Rhinological and Otological

Society; at one time professor of diseases of the nose and throat at the New York Post-Graduate Medical School and Hospital, Columbia University, New York; died in West Palm Beach, Fla., Dec. 5, 1946, aged 80, of coronary thrombosis.

Kirby Dwight ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1905; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; served as president of the Medical Society of the County of New York, as trustee and member of many committees of the New York Academy of Medicine and as treasurer of the Medical Society of the State of New York; on the staffs of the Lincoln and Roosevelt hospitals; died Dec. 3, 1946, aged 67.

John Joseph Ederer, Minneapolis; University of Minnesota Medical School, Minneapolis, 1930; member of the American Medical Association; interned at the U. S. Marine Hospital, Stapleton, Staten Island, N. Y.; formerly medical superintendent and owner of the Mahnomen (Minn.) Hospital; for three years examining physician for the Selective Service in Mahnomen County; died Dec. 11, 1946, aged 41, of coronary thrombosis and pneumonia.

George Boardman Edwards, Darlington, S. C.; Medical College of the State of South Carolina, Charleston, 1901; member of the American Medical Association; honorary member of the South Carolina Medical Association; served as mayor and as county coroner; died in the McLeod Infirmary, Florence, Dec. 13, 1946, aged 72, of carcinoma.

Elmer Sylvester Erhard ⊕ Curwensville, Pa.; Medical Department Western University of Pennsylvania, Pittsburgh, 1906; president of the school board; served as county coroner and a term as burgess; for many years medical examiner for the local draft board; on the visiting staff of the Clearfield (Pa.) Hospital; died Dec. 2, 1946, aged 69, of coronary thrombosis.

Emerson Armor Fletcher, Milwaukee; University of Pennsylvania Department of Medicine, Philadelphia, 1892; member of the American Urological Association; fellow of the American College of Surgeons; served on the staffs of the Milwaukee, St. Mary's and Milwaukee Children's hospitals; died Dec. 6, 1946, aged 77, of arteriosclerosis.

Julius Henry Philip Gauss ⊕ Indianapolis; Rush Medical College, Chicago, 1903; assistant professor of medicine at the Indiana University School of Medicine; interned at the Michael Reese Hospital in Chicago, where he was on the staff of the Alexian Brothers' Hospital from 1908 to 1912; at one time fellow in medicine at the Mayo Foundation, Rochester, Minn.; formerly on the faculty of his alma mater; on the staffs of the Methodist and St. Vincent's hospitals; died Oct. 31, 1946, aged 74, of cerebral thrombosis.

Matthew Gerard Golden, Brooklyn; Fordham University School of Medicine, New York, 1919; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Oto-Laryngology; served as assistant clinical professor of otolaryngology at the Long Island College of Medicine; on the staffs of the Kings County Hospital, St. Peter's Hospital, Victory Memorial Hospital and the Midwood Hospital; died Nov. 11, 1946, aged 52.

Philip Hartson Greeley ⊕ Concord, N. H.; Dartmouth Medical School, Hanover, N. H., 1897; member of the Maine Medical Association; died Dec. 2, 1946, aged 76, of arteriosclerosis.

Edgar James Haines, Medford, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1900; member of the American Medical Association; served on the staff of the Burlington County Hospital in Mount Holly; died Nov. 5, 1946, aged 67, of cardiovascular disease.

John Allan Ilderton, Yemassee, S. C.; Medical College of the State of South Carolina, Charleston, 1911; died Nov. 4, 1946, aged 60.

William Eli McCormack ⊕ Major, U. S. Army, retired, Sarasota, Fla.; University of Louisville Medical Department, 1911; Army Medical School and Medical Field Service School in 1921; at one time professor of microscopic anatomy at the University of Louisville Medical Department; entered the medical corps of the U. S. Army in 1918; served during World War I; retired on Dec. 31, 1932 for disability in line of duty; died in the Moore County Hospital, Pinehurst, N. C., Sept. 5, 1946, aged 59, of coronary occlusion.

George Coe Merriman, Lake Como, Pa.; Albany (N. Y.) Medical College, 1897; member of the American Medical Association; veteran of the Spanish-American War; died Nov. 16, 1946, aged 71.

Heber Guy Morgan, Red Lodge, Mont.; College of Physicians and Surgeons, Baltimore, 1906; member of the American Medical Association; died Nov. 26, 1946, aged 63, of carcinoma of the liver.

John Matthew Mras, Trenton, N. J.; Medico-Chirurgical College of Philadelphia, 1916; at one time superintendent of the Chester County Hospital for the Insane in Embreeville; died in St. Francis Hospital Nov. 12, 1946, aged 54, of ruptured esophageal varix and diabetes mellitus.

George James Musgrave ⊕ Chicago; State University of Iowa College of Homeopathic Medicine, Iowa City, 1901; assistant clinical professor of otorhinolaryngology at the Loyola University School of Medicine; fellow of the American College of Surgeons; on the staffs of the Provident and Mercy hospitals; died in Henrotin Hospital Nov. 28, 1946, aged 70.

John Rudolph Nenninger, Westfir, Ore.; University of Cincinnati College of Medicine, 1940; member of the American Medical Association and Ohio State Medical Association; interned at the Christ Hospital in Cincinnati; served in the medical corps, U. S. Naval Reserve, during World War II and was released in March 1946 from active duty with rank of lieutenant commander; died in Eugene Nov. 3, 1946, aged 39, of acute leukemia.

John Howard Norris, Fostoria, Ohio; University of Wooster Medical Department, Cleveland, 1877; Bellevue Hospital Medical College, New York, 1880; served on the staff of the City Hospital, where he died Nov. 25, 1946, aged 90, of acute suppurative appendicitis and peritonitis.

Harry Theron Pitman, Chulumani, Bolivia, South America; College of Medical Evangelists, Loma Linda-Los Angeles, 1940; served an internship and residency at the General Hospital of Fresno County in Fresno, Calif.; commissioned a first lieutenant in the medical reserve corps of the U. S. Army and was later honorably discharged; in charge of the Chulumani Sanitarium and Hospital; killed in an airplane accident Nov. 8, 1946, aged 34.

Walter Robert Rieck ⊕ Kearny, N. J.; Long Island College Hospital, Brooklyn, 1906; died in West Hudson Hospital, Kearny, Nov. 4, 1946, aged 64, of cirrhosis of the liver and gastric hemorrhage.

John Henry Rinehart, Moran, Kan.; Eclectic Medical University, Kansas City, 1903; served during World War I; died Nov. 2, 1946, aged 73, of cerebral hemorrhage.

Eugene C. Roseberry, Springfield, Mo.; Rush Medical College, Chicago, 1895; member of the American Medical Association; member of the medical board of the Missouri State Sanatorium, Mount Vernon; on the associate staff of the Burge and St. John's hospitals; on the staff of the Springfield Baptist Hospital, where he died Nov. 29, 1946, aged 78, of coronary thrombosis.

Chester I. Sater, Albion, Idaho; Barnes Medical College, St. Louis, 1909; member of the American Medical Association; died in the Rupert (Idaho) General Hospital Nov. 15, 1946, aged 62, of heart disease.

Harold Clinkscales Shirley, Charlotte, N. C.; Johns Hopkins University School of Medicine, Baltimore, 1918; member of the American Medical Association; on the staff of the Memorial Hospital; died Nov. 28, 1946, aged 55, of cerebral hemorrhage.

Carl Miller Sneed ⊕ Columbia, Mo.; University of Missouri School of Medicine, Columbia, 1901; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; served during World War I; on the staff of the Boone County General Hospital; died Nov. 6, 1946, aged 69, of coronary thrombosis.

Joseph John Sweeney, Philadelphia; Temple University School of Medicine, Philadelphia, 1927; school doctor in Yeadon, Pa.; interned at St. Mary's Hospital; served a residency at the Doctors Hospital, where he later became a member of the staff and where he died Nov. 27, 1946, aged 47, of uremia.

Dale Edward Thomas ⊕ Saginaw, Mich.; University of Michigan Medical School, Ann Arbor, 1928; past president of the Saginaw County Medical Society; on the visiting staffs of St. Mary's and St. Luke's hospitals; on the staff of the Saginaw General Hospital; died Nov. 5, 1946, aged 42, of cerebral hemorrhage.

Charles Edward Westerhout, Brea, Calif.; College of Medical Evangelists, Loma Linda-Los Angeles, 1929; interned at the Portland Sanitarium and Hospital in Portland, Ore.; served during World War II; on the staff of the Fullerton (Calif.) Hospital; died in the Veterans Hospital, Oakland, Nov. 20, 1946, aged 44, of myelogenous leukemia.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 22, 1947.

Socialistic Medical Bodies and the Health Service

A meeting of the representative body of the British Medical Association will be held on January 28 to decide whether the association will negotiate with the minister of health or not as to the terms under which the profession will work the national health service. As reported in a previous letter, the council of the association has advised the representatives to decline to negotiate and it seems probable that they will do so. This has led to a move by a body which is antagonistic to the British Medical Association, the Medical Practitioners Union. It has a membership of 4,000 against the 58,000 of the British Medical Association and is a registered trade union. It claims to be nonpolitical, but the dermatologist Sir Ernest Graham-Little, who is the most prominent figure among medical members of Parliament, refers to it as a socialistic body. He evidently regards trade unionism as socialistic. In theory there is a clear difference between socialism and trade unionism. A trade union is simply a combination of the workmen in a particular trade to promote their interests by collective negotiation, restrictive practices and strikes, often to detriment of the community. Socialists, on the other hand, want the state to take over and carry on industries now in the hands of private enterprise. But in present British politics the distinction has disappeared, for the government, which has begun to socialize the great British industries, derives most of its support from the trade unions. The Medical Practitioners Union has sent a circular to doctors stating that the representative body of the British Medical Association at its coming meeting on January 28 will probably decide not to negotiate with the minister of health. Doctors who intend to enter the new service are told that in their own interests they should be represented at the negotiations. It is claimed that the union has studied for many years the question of a state service, and is therefore in a favorable position for such negotiation.

There is another body, the Socialist Medical Association, with a membership of 3,000. There is no question as to the applicability of the term "socialist" here, but there is as to the term "medical," as the majority of the members are not drawn from the medical profession. Those who are amount to less than 1 per cent of the profession. It is obvious that in the coming struggle with the government over the new act these bodies, whether truly socialistic or of socialistic affinity, are likely to cause trouble. The British Medical Association has tried as far as possible to keep politics out of the struggle, but it is of little use to appeal to doctors of socialistic convictions to do this.

Treatment of Traumatic Paraplegia

At the Section of Neurology of the Royal Society of Medicine, Dr. L. Guttmann described the prognosis and treatment of traumatic paraplegia on the basis of 177 cases treated at a center for spinal injuries. The patients were received at different intervals after injury, some with sepsis and contractures. On admission they were often undernourished. Food was considered important in treatment, a high protein intake being essential to replace that lost through pressure sores or urinary infection. The most important measure in the prevention of sores was continual change of posture by day and by night. Infection was controlled by chemotherapeutic agents, and necrotic portions were excised. Dressings should be changed once or twice a day.

In the management of the bladder, neither urethral catheterization nor suprapubic cystotomy had proved wholly satisfactory. Every patient admitted with a cystotomy always had infected urine, often with severe ascending infection. There are indications for cystotomy, such as urethral stricture, but there is no case for its adoption as a routine. When adopted it should be discontinued as soon as possible and replaced by washouts through a catheter or indwelling catheter to reduce infection. Distention of a painless bladder below the level of the lesion sets up a widespread reflex, with flushing of the head and neck, nasal occlusion, raised blood pressure, slow pulse and respiratory discomfort. This reflex proved a valuable guide to distention and reduced the call for acetylsalicylic acid to relieve headache.

Mental changes may be due to infection. An early sign is querulous or rude behavior. Reactive mental disturbance also occurs from psychologic shock. It is essential to secure the patient's cooperation and to surround him with an optimistic atmosphere. The aim should be to reduce the period of recumbency and restore independence as soon as possible. Contractures and atrophy must be guarded against by keeping paralyzed limbs in proper position. The worst contractures are seen in patients who have been in plaster beds. Passive movements are begun at once. Intramedullary injection of 1 cc. of 90 per cent alcohol controls flexor spasm for three or four weeks.

A New Journal Devoted to Nutrition

The Central Council for Health Education announces the publication of a new bimonthly, the *Nutrition Bulletin*, in January. Its object is to deal not with the basic principles of nutrition but with their application to social betterment. Thus it will deal with the growth of the various nutrition services, public instruction, food habits, and the place of diet in the national health. The purpose is to inform all concerned in improving the nation's diet. The address is Tavistock House, Tavistock Square, London, W. C. 1. The annual subscription is 3 shillings.

ITALY

(From Our Regular Correspondent)

Oct. 31, 1946.

Surgical Association of Piedmont

Two preliminary sessions of the National Convention of Medicine and Surgery have been held recently by the Surgical Association of Piedmont in cooperation with the Academy of Medicine of Turin. These meetings were devoted exclusively to results of treatment of tumors of the colon. Among the speakers were Professors S. Battistini, E. Zilocchi, Mottura, Bertocchi and Colombo.

Professor Zilocchi reviewed the histories of 115 patients with tumors of the colon who recovered at the surgical clinic of the University of Turin. He confined his remarks to the surgical treatment of 62 patients who recovered during the period 1936 to 1945. Only 28 of these had radical operations performed. The death rate in this group was 41.9 per cent and the death rate in those treated by palliative means when occlusion was present and the radical operation was not carried out was 44 per cent. Professor Mottura reported the results of 88 necropsies which had been performed at the anatomicopathologic institute of the University of Turin. Natural death had occurred in 48 of the patients and peritonitis was observed in about 50 per cent. Incidence of bronchopneumonia was high. Professor Bertocchi discussed the circulation of the colon and stated that this was poor in three regions: the terminal segment of the ileum, the transverse colon and the sigmoid. This suggests that in right hemicolectomy dissection of the small intestine may be performed 20 to 30 cm. distant from the ileocecal valve after ligation of the ileocolic artery.

PALESTINE

(From Our Regular Correspondent)

JERUSALEM, Jan. 1, 1947.

Method of Prolonging the Action of Local Anesthetics

The prolongation of the action of drugs on the organism has been attempted repeatedly, lately in the case of the antibiotics. Rappoport (*Acta med. orient.* **5**, April 1946) has published a new method which he demonstrates with benzocaine. The drug is dissolved in a nonwatery medium (urethane-methylacetamide); when this solution comes in contact with water, benzocaine is rapidly precipitated.

On injection of this benzocaine solution into body tissues the contact with the body fluids provokes a precipitation of the benzocaine. The solvent is quickly absorbed, and benzocaine remains at the site of the injection in the form of a nonwater soluble, finely distributed substance. The anesthetic action continues until the benzocaine is completely absorbed. A depot of benzocaine is thus formed. In animal experiments with rabbits an anesthesia of two to four weeks' duration could be observed. No tissue damage was seen microscopically at the site of the injection.

In the same number Spira reports clinical experiments with this new principle in 47 cases in which 290 injections had been made. The injections were given endoneurally, perineurally, intra-articularly and by infiltration. The amount of the 2 per cent solution used was between 0.2 and 5 cc. The effect of the anesthetic lasted up to fourteen months. Cases of pruritus ani, epicondylitis, muscular spasm, causalgia, ischialgia, neuroma and humeroscapular contraction were treated. As the injections are very painful, the site of the injection was previously anesthetized by infiltration or nerve block with a 1 per cent watery procaine solution.

Spira points out that, if possible, the injection should not be given into inflamed tissue. The infiltration or the nerve block with procaine is executed with the usual technic; the needle is not removed, but 0.2 to 5 cc. of the benzocaine solution is injected at the same site as soon as anesthesia has set in. Subcutaneous injection is to be avoided.

Virus Myocarditis

Lyon discusses the problem of acute myocarditis as a sequel to infectious mononucleosis in the *Acta med. orient.* **5**:228, 1946. His observations represent an interesting contribution to the problem of virus myocarditis; he presents a case of infectious mononucleosis in which, in the course of four months, considerable changes were found in the electrocardiogram. These changes, which disappeared again completely, consisted mainly of a characteristic negative T deflection in CF_2. The clinical diagnosis was ascertained by a positive Paul-Bunnell test, a specific blood count and typical glandular involvement. Virus myocarditis is of special interest because in Palestine a very slow convalescence is characteristic in the numerous cases of infectious hepatitis and infectious mononucleosis.

Histochemical Method for Staining Kerasin

At a monthly scientific meeting held in the Institute of Pathological Anatomy and Histology of the Hadassah Hospital and Hebrew University, Jerusalem, Professor S. Franco and Dr. M. Wolman demonstrated a new histochemical method for staining kerasin in tissues of patients suffering from Gaucher's disease. The method consists in immersion of frozen sections for thirty minutes in boiling distilled water, buffered at p_H 4, followed by the usual treatment with sudan III. The method can be made specific for cerebrosides by extracting the sections with ether and acetone before staining. The authors believe that the immersion of the sections in boiling water separates the kerasin from a lipoproteic complex.

Hepatic Complications of Amebiasis

In the *Journal of the Palestinian Arab Medical Association* of September 1946 Canaan reports the occurrence of liver complications in amebiasis. He finds that 27.5 per cent of the Palestinian Arabs are infected with Endameba histolytica. Amebic dysentery represents one third of all cases of dysentery in Palestine.

Hepatic complications in Arabs are found statistically to occur in 0.27 per cent of hospital cases. The total number of patients under review was 41,550: at the French Hospital, Bethlehem, from 1935 to 1944, 10,500; at the German Hospital, Jerusalem, in five years, 9,690, and at the French Hospital, Jerusalem, from May 1934 to April 1946, 21,360.

SPAIN

(From Our Regular Correspondent)

MADRID, Dec. 17, 1946.

Alloxan Diabetes

In the medical life of Spain recently one of the studies which will no doubt have wide repercussions was done by Dr. Grande Covian, late assistant professor of physiology in the Medical School of Madrid University, who is now working in the Institute for Medical Research under the direction of Professor C. Jimenez Diaz and concentrating on the problem of alloxan diabetes.

His experiments on dogs began in the spring of 1944. In the first comparative experiment with diabetes caused by removal of the pancreas and diabetes produced by high doses of alloxan, he observed that the latter form was more serious, which led him to visualize the existence of extrapancreatic factors in its production. He then produced cases of slight diabetes, which were spontaneously curable by small doses of alloxan, it being observed that a second injection of alloxan in diabetogenous doses was absolutely inefficacious in these animals. This observation led the investigators to describe such cases as "resistant to alloxan" (or "alloxan resisting"). So far, these cases seem to have been ignored by other investigators.

On studying the causative mechanism of this state of resistance, Dr. Grande observed a rapid destruction of the alloxan in contact with the blood and tissues, this concurring with the result obtained when an attempt was made to determine chemically the degree of alloxan in the blood; with this observation is has become possible to calculate the amount of time needed for the destruction of alloxan, avoiding contact between it and certain viscera.

Furthermore, he saw that if the alloxan did not circulate through the pancreas owing to a ligature in the vessels of that organ, the animal to which diabetogenous doses were injected died with all the symptoms of uremia. To avoid uremia they made the alloxan injection in animals with their renal pedicles temporarily tied; not only did these animals not develop uremia, but they were not diabetic either. If a further dose of alloxan was injected later, they then contracted diabetes. The circulation of alloxan through the kidney therefore seems to be necessary for the development of diabetes and the establishment of resistance to alloxan.

The direct injection of alloxan into the pancreas does not produce diabetes, although disturbances are observed in the β cells of the islets. Therefore, alloxanic diabetes does not appear to be a purely pancreatic form of the disease.

The successive communications on this great work of Dr. Grande Covian's and his associates, Dr. Oya especially, have appeared in the *Revista Clinica Española;* it is to be expected that the investigators will go on producing interesting results.

Correspondence

APPARENT SENSITIVITY TO AMIGEN

To the Editor:—The clinical note entitled "Apparent Sensitivity to Amigen," by Drs. Harris, Gordon, Gray and Barton (THE JOURNAL, Nov. 30, 1946, p. 785) described the attempted suicide of a girl aged 17, who took 125 grains (8.1 Gm.) of phenobarbital. She rapidly went into coma and by the fourth day a fatal outcome seemed likely. On the evening of the fourth day of coma the administration of Amigen 5 per cent in 5 per cent dextrose was begun by the slow intravenous drip method. When 100 cc. of the solution had been administered, a chill occurred. The intravenous drip medication was discontinued. The temperature rose rapidly to 105.8 F. and the pulse rate rose to 164 or higher. The application of cold wet packs and the use of ice water enemas were followed by a gradual decline of the temperature to 103 F., at which point these measures were discontinued. Shock ensued, with an irregular thready pulse and a steady fall of the blood pressure to 70 systolic and zero diastolic. At that point the pulse could not be felt. Epinephrine hydrochloride given intramuscularly resulted in a temporary response. Respirations were extremely shallow and gasping. Nikethamide administered intravenously concomitantly with 10 per cent dextrose brought about improvement in pulse rate and blood pressure. From that time improvement was steady. Partial return to consciousness followed in about forty-eight hours, and speech returned slowly with long intervals of a semicomatose state.

The authors are to be congratulated on a splendid therapeutic result; however, the emphasis laid on the fact that Amigen was the direct cause of the collapse and the assumption that Amigen may give rise to serious foreign protein reactions do not seem to me to be consonant with the evidence presented. The shock symptoms in this patient might reasonably be attributed to the toxic effects of the inordinately large dose of phenobarbital taken, and this deduction is supported by the description of the toxic symptoms of barbiturate poisoning given by Goodman and Gilman (The Pharmacological Basis of Therapeutics, New York, Macmillan Company, 1941, pp. 140-142). It would offer an explanation for (1) coma, (2) prolonged respiratory depression, (3) anoxia, (4) vasodilatation, (5) fall in blood pressure and (6) hypostatic pneumonia resulting from the shallow respiration and low blood pressure. It is known that a person who survives severe barbiturate poisoning for twenty-four to thirty-six hours manifests the shock symptoms on the fourth day or later. In this instance the shock symptoms were most pronounced on the fourth day, and return to normal did not occur for several succeeding days.

It would therefore seem to me more proper to attribute the shock symptoms to the barbiturate poisoning, which antedated the giving of Amigen, for the Amigen was administered at the height of the shock symptoms and when the patient was still in coma. Although the Amigen was promptly discontinued when the chill and sudden rise of temperature occurred in the course of its administration, the patient still remained in coma for several days.

Further, we cannot ignore the fact that the chill and hyperpyrexia may have resulted from a "pyrogen" in the tubing of the intravenous apparatus used for the Amigen. Such pyrogenic reactions are known to occur in intravenous therapy. It has been amply demonstrated that when the tubing is properly prepared such reactions do not occur in the administration of Amigen.

If the reaction is laid to Amigen on the basis of allergy, I fail to see how a rise in temperature can be reconciled with this thesis. Were this an anaphylactic shock reaction, a fall in blood pressure would most likely fit in with a "canine type" of anaphylaxis, in which *instance the temperature invariably falls.* Furthermore, there were no allergic manifestations of a respiratory or dermal character, and the response to epinephrine was indifferent, all of which would militate against allergy as a basis for the reaction.

Hence I do not feel that adequate evidence is presented to support the deduction of the authors that Amigen was responsible for a nearly fatal anaphylactic type of reaction. It appears more likely that a "pyrogen" due to faulty preparation of the tubing was responsible for the rise in temperature. The shock symptoms, I believe, were due to the barbiturate poisoning. The sudden rise in temperature perhaps served as a jolt to the waning cardiovascular and respiratory systems and was beneficent rather than harmful. The stimulating effects of nikethamide and the diuretic benefits of 10 per cent dextrose added further to the patient's recovery.

All shock symptoms noted clinically should not be attributed too readily to an allergic reaction. The use of such a term as "apparent sensitivity" to describe a shock reaction is misleading. "Cardiovascular collapse" or "alarm reaction" might better have been used to describe the shock reaction in this case. The rise in temperature must remain as an isolated symptom unrelated to the collapse the patient suffered.

BRET RATNER, M.D., New York.

DIET LOW IN SALT

To the Editor:—The discussion of Drs. Wheeler, Bridges and White's paper "Diet Low in Salt (Sodium) in Congestive Heart Failure" in THE JOURNAL January 4 was of special interest to me. Dr. Frederick Allen refers to his early work in 1920 concerning the salt free diet and claims priority for many clinical results and conclusions. I should like to refer to the work of the late Hermann Strauss, medical director of the Jewish Hospital in Berlin, Germany, whose early investigations about the role of salt in edema date back to the beginning of this century. In his book "The Nephritis" (1907), Strauss discussed at length the role of a saltless diet in edema and followed it up in his book "Practical Hints in the Saltless diet," published in 1910. Ever since that time Strauss had stressed in his publications the importance of a saltless diet in the treatment of edematous cardiac conditions.

I want to mention Strauss's name in this connection because his work seems to be forgotten in this country owing to the fact that since 1933 there had been no mutual contact in the medicine of this country and Germany. I happen to know these details, having worked with Strauss for seven years till 1941. A scientific appreciation of his work by me will be published this year in the Robinson Anniversary Volume (under the editorship of Dr. S. R. Kagan of Boston).

Hermann Strauss died in 1942 in a German concentration camp as a victim of Nazism.

CONRAD L. GOSSELS, M.D., Mount Jackson, Va.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Evidence: Blood Grouping Tests Held Not to Be Conclusive Evidence of Paternity.—The plaintiff, by her guardian ad litem, commenced a bastardy proceeding against the defendant for the purpose of obtaining allowances for medical care, support and attorneys' fees. From adverse portions of the judgment, the defendant appealed to the district court of appeal, second district, division two, California.

Prior to the plaintiff's birth, her mother and the defendant entered into a stipulation providing, among other things, that within four months after the birth of the child the plaintiff, the mother and the defendant would all submit themselves to a blood grouping test by certain physicians chosen in accordance with the provisions of the stipulation. The purpose was to determine the paternity of the child, and the stipulation was signed by the plaintiff's guardian ad litem and by the defendant. After the plaintiff's birth the tests were made, the physicians, whose qualifications, competence and integrity are not questioned, reporting as follows:

> Examination of the bloods of Charles Chaplin, Joan Berry and Carol Ann Berry give the following results:
>
> | | Group | Type |
> |---|---|---|
> | Charles Chaplin | O | MN |
> | Joan Berry | A | N |
> | Carol Ann Berry | B | N |
>
> Conclusion reached as the result of these blood grouping tests is that, in accordance with the well accepted laws of heredity, the man, Charles Chaplin, cannot be the father of the child, Carol Ann Berry. The law of heredity which applies here is "The agglutinogens A and B cannot appear in the blood of a child unless present in the blood of one or both parents."

Two of the physicians testified at the trial that the report truly represented their findings from the tests made. They and one other physician testified that by reason of said tests defendant was not and could not have been the father of the plaintiff. The report and the evidence of the physicians were not controverted by any scientific evidence but were before the jury to be considered with all the evidence in the case. According to the evidence, the so-called A and B test was discovered about 1900 and the M and N test about 1930. It may be argued that because defendant's blood was type MN and the bloods of both Miss Berry and plaintiff were type N, defendant might have been the father of the plaintiff. One physician testified "We could not have excluded him on such an incomplete test," and another "We could not rule him out." But it appears from the evidence that the M and N test was an incomplete test and study of the bloods of the respective parties, and that the A and B test was necessary to an authentic and complete report.

Were the blood tests conclusive that defendant was not the father of the plaintiff? The court held that they were not and based its holding on *Arais* v. *Kalensnikoff*, 10 Calif. (2d) 428, 74 P. (2d) 1043, the only reported case in California in which blood tests were used for the purpose of attempting to determine the parentage of a child. In that case the court held that the evidence concerning the blood test "is expert opinion because the conclusions reached by the examiner are based upon medical research, and involve questions of chemistry and biology with which a layman is entirely unfamiliar," but that such tests and the evidence thereof are not conclusive because not so declared by the code and further that expert testimony is to be given the weight to which it appears to be justly entitled. Continuing, the district court said, conceding the immutability of the scientific law of blood grouping, which we have no reason to question, the infallibility of the results of blood tests depends upon the skill employed in making them. Errors are reported due to (1) the lack of training of the serologist; (2) the use of commercial serums; (3) the failure to make a countertest. When scientific testimony and evidence as to facts conflict, the jury or the trial court must determine the relative weight of the evidence. The law makes no distinction between expert evidence and that of any other character. The decision in the Arais case, concluded the court, has been the subject of discussion and criticism in law reviews and other legal periodicals but not by other courts as far as we have been able to ascertain, and it remains the law of this state until modified or overruled by the court that rendered the opinion. Accordingly, the judgment in favor of the plaintiff was affirmed.

In a specially concurring opinion, one of the Supreme Court judges announced that he concurred in the judgment because of the fact that the court was bound by the decision of the Supreme Court in *Arais* v. *Kalensnikoff* but added that he believed that the Supreme Court was in error in its determination of that case. In his specially concurring opinion he said that the ascertainment of the factual truth in the adjudication of any controversy is a consummation devoutly to be wished. Time was when the courts could rely only on human testimony. But modern science brought new aids. The microscope, electricity, x-ray, psychology, psychiatry, chemistry and many other scientific means and instrumentalities have revised the judical guessing game of the past into an institution approaching accuracy in portraying the truth as to the actual fact where, in the pursuit of which, scientific devices may be applied. The chemical tests for learning the presence of poisons in the blood stream, application of the roentgen ray in defining the fracture of a bone, the use of the microscope in acquiring exact knowledge of the authorship of documents, of the presence of bacteria or of the prevalence of white corpuscles—all argue eloquently for a reliance on scientific devices for ascertaining the truth. If the courts do not utilize these unimpeachable methods for acquiring accurate knowledge of pertinent facts, they will neglect the employment of available, potent agencies which serve to avoid miscarriages of justice. In conclusion the concurring justice said in the case at bar a widely accepted scientific method of determining parentage was applied. Its results were definite. To reject the new and certain for the old and uncertain does not tend to promote improvement in the administration of justice.—*Berry v. Chaplin, 169 P. (2d) 442 (Calif., 1946).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, Feb. 8, page 423.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* Various centers, March 17-19. *Part III.* Durham, Oct. 21-23. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral.* Los Angeles, April 11-12. Sec., Dr. P. M. Wood, 745 Fifth Ave., New York.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Written.* Various centers, March 24. Final date for filing application is Feb. 17. *Oral.* New York City, April 25-27. Sec., Dr. George M. Lewis, 66 E. 66th St., New York 21.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written.* Chicago, March 17. *Oral.* Chicago, April 24-26. Final date for filing application is Feb. 15. Asst. Sec., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY. *Oral.* Examination to be given during the Summer. Applications for examination will be accepted until Feb. 15. Sec., Dr. P. C. Bucy, 912 S. Wood St., Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Part II.* Pittsburgh. June 1-7. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OPHTHALMOLOGY: *Oral. All Groups. Parts I and II.* Chicago, October. *Final date for filing application is March 1.* Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Me.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral.* St. Louis, April 16-20. Chicago, Oct. 7-11. Sec., Dr. D. M. Lierle, University Hospitals, Iowa City, Ia.

AMERICAN BOARD OF PATHOLOGY: Philadelphia, June 3-4. Final date for filing application is April 15. Sec., Dr. Robert A. Moore, Euclid Ave. and Kings Highway, St. Louis 10.

AMERICAN BOARD OF PEDIATRICS: Effective May 1, application fee will be $125.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medicine, New York

1:583-714 (Dec.) 1946. **Partial Index**

Studies on Chronic Thyrotoxic Myopathy. G. W. Thorn and H. A. Eder.—p. 583.
*Disturbance in Salt and Water Metabolism in Hypertension. G. A. Perera and D. W. Blood.—p. 602.
Thiouracil in Angina Pectoris. W. S. Reveno.—p. 607.
Effects of Quinacrine (Atabrine) Suppression on Course of Pacific Vivax Malaria. I. M. London, P. H. Lavietes, K. E. Peterson and H. Most.—p. 615.
*"Muscle Spasm" in Acute Low Back Pain and Similar Syndromes: New Method of Treatment with Curare (d-Tubocurarine in Oil and Wax). E. B. Schlesinger and C. Ragan.—p. 621.
Subacute Bacterial (Streptococcus Viridans) Endocarditis Treated with Penicillin. R. L. McMillan.—p. 628.
Folic Acid and Bone Marrow in Radiation Therapy. P. L. Davis.—p. 634.
Clinical Vibrometer: Apparatus to Measure Vibratory Sense Quantitatively. W. S. Collens, J. D. Zilinsky and L. C. Boes.—p. 636.
Planning of Camp for Diabetic Children. H. J. John.—p. 642.

Disturbance in Salt and Water Metabolism in Hypertension.—Perera and Blood made observations on 12 control subjects and 12 patients with uncomplicated hypertensive vascular disease following the rigid withdrawal of sodium chloride for twenty-four hours. Despite an otherwise constant regimen, sodium restriction was followed by significant weight loss and increased urine output in control subjects which was not evident in hypertensive patients. The authors think that this difference in response indicates a disturbance in salt and water metabolism in hypertension referable to renal changes probably mediated by the adrenal cortex.

Curare in "Muscle Spasm" in Acute Low Back Pain.—According to Schlesinger and Ragan "muscle spasm" is often an integral part of the clinical picture of the acute low back syndrome. A suspension of d-tubocurarine in oil and wax has proved very useful in breaking up the muscle spasm. The difference in the response of patients exhibiting root compression from those with other types of disorders is described and is suggested as a diagnostic test. The use of d-tubocurarine in oil and wax for the prevention of deformity and alleviation of pain in early rheumatoid arthritis has led to promising results in a small group of patients.

American Journal of Public Health, New York

36:1245-1364 (Nov.) 1946

Laboratory Procedures in Sanitary Milk Control. A. H. Robertson.—p. 1245.
Training Public Health Personnel from Other Countries in United States. C. E. Shepard and W. W. Peter.—p. 1260.
World Health Organization: Cornerstone of Peace. T. Parran and F. G. Boudreau.—p. 1267.
Sanitary Engineer Looks Forward. A. Wolman.—p. 1273.
Insect Tests of Wire Screening Effectiveness. S. S. Block.—p. 1279.
*Analysis of Effect of Fat in Diet on Recovery in Infectious Hepatitis. C. L. Hoagland, D. H. Labby, H. G. Kunkel and R. E. Shank.—p. 1287.
Postwar Program for Abatement of Pollution in New York Harbor. R. H. Gould.—p. 1293.
Work of Interstate Sanitation Commission. S. G. Hess.—p. 1299.
In-Service Training in Rural Health Department. P. A. Bearg and Ruth Stockle.—p. 1304.
*Reverse Approach to Fluorine-Dental Caries Hypothesis. R. A. Downs and F. S. McKay.—p. 1307.

Fat in Diet During Recovery from Infectious Hepatitis—Hoagland and his associates made a comparative study between the effects of a diet low in fat and high in protein and a diet relatively high in fat and high in protein on the period required for recovery in 70 patients with infectious hepatitis in whom there was moderate to severe acute liver insufficiency. No harmful effects were observed to follow the diet high in fat in patients in whom the intake of protein was kept correspondingly high. Indeed, the diet high in fat appeared to have decided advantages over the diet low in fat. With the former diet, weight loss was minimal in the acute stages of hepatitis and gain in weight maximal in convalescence. Added evidence of the superiority of the high fat, high protein diet was indicated by the results of serial tests of sulfobromophthalein retention, which revealed normal levels for the patients on the high fat, high protein diet earlier than the group on the high protein, low fat regimen.

Fluorine-Dental Caries Hypothesis.—Downs and McKay present a study that was brought about by reports from Montrose, Colo., that the dental caries rate was extremely high, and that the city water supply contained 1.4 parts per million of fluorine. A high dental caries rate and 1.4 parts per million of fluorine in the water supply do not usually exist together, and further investigation was deemed necessary. Examination of the high blood population revealed that some had a high rate of caries while others had fluorosis and a low rate of caries. A considerable number of the students with fluorosis had been born and reared in Spring Creek Mesa, where the water was obtained from deep wells. The pupils raised in these two districts—Spring Creek Mesa and the city of Montrose—only 5 to 10 miles apart, present a totally different picture in regard to dental caries. The only conclusion that could be reached was that the report which gave the fluorine content of the city water as 1.4 parts of fluorine per million was in error. This was established through a later analysis, which revealed that the correct fluorine content was 0.3 part per million.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

56:555-682 (Nov.) 1946

Problems in Abnormal Intestinal Physiology Associated with Peritoneal Adhesions and Ileus: Pancoast Lecture. R. Golden.—p. 555.
*Pulmonary Reaction Following Intrabronchial Instillation of Lipiodol in Bronchial Asthma. S. I. Kooperstein and H. E. Bass.—p. 569.
*Primary Amyloidosis of Lungs. P. R. Dirkse.—p. 577.
Roentgen Demonstration of Aberrant Pancreatic Nodule in Stomach: Report of 3 Cases. J. F. Roach and M. H. Poppel.—p. 586.
Report of Case of Ruptured Stomach in Infant 3 Days Old. E. P. Pendergrass and R. E. Booth.—p. 590.
Roentgen Diagnosis of Retroperitoneal Lipoma. F. Windholz.—p. 594.
Ankylosing Spondylitis: Report of Occurrence in Two Brothers. R. M. Stecher and H. Hauser.—p. 601.
Ossification of Coracoclavicular Ligament Following Dislocation of Acromioclavicular Articulation. A. B. Soule Jr.—p. 607.
Study of Lower Extremity Length Inequality. W. A. Rush and H. A. Steiner.—p. 616.
Large Sublingual Metallic Foreign Body: Report of Case. T. F. Leigh.—p. 624.
*Roentgen Treatment of Bursitis of Shoulder. B. R. Young.—p. 626.
Irradiation Sickness in Rats. C. G. Johnson, C. F. Vilter and T. D. Spies.—p. 631.
Unusual Skin Sensitivity to Roentgen Radiation: Report of Case. S. A. Leader.—p. 640.
Visit to Roentgen Laboratory in 1923. P. C. Hodges.—p. 642.

Intrabronchial Instillation of Iodized Oil.—Kooperstein and Bass report 3 cases of bilateral pneumonia which developed following intrabronchial instillation of iodized oil. The coincidence of the development of bilateral basal pneumonia in the portions of the lung fields previously instilled with iodized oil associated with hives and eosinophilia and occurring in known cases of bronchial asthma seemed to warrant further investigation. Sensitivity tests in the cases reported and in controls seemed to incriminate the iodized oil as the agent responsible for the acute pulmonary episodes. It is a matter of conjecture as to why more than a week passed before the onset of pneumonia, although there may be a relationship between the form in which iodine is present in poppyseed oil and its ability to act as a sensitizing agent. It is noteworthy that the time between instillation of iodized oil and onset of pneumonia resembled the "delayed reaction" of serum sickness.

Primary Amyloidosis of Lungs.—Dirkse says that, whereas the secondary type of amyloidosis, as it occurs in association with some chronic disease, is fairly familiar, the primary or atypical form, in which no antecedent condition appears to offer a background for the deposition of amyloid, is far less frequently encountered. After listing the characteristics of the primary form, on which a diagnosis of atypical or primary amyloidosis, as opposed to the secondary type, may be based, the author adds to the growing list of cases of primary amyloidosis a case involving primarily the lungs, mediastinum, lymph nodes and spleen. He describes the x-ray characteristics of the intrathoracic form of this condition and reviews x-ray findings previously recorded in these and other organs.

Roentgen Treatment of Bursitis of Shoulder.—Young says that the results obtained with roentgen therapy in 87 patients with bursitis of the shoulder indicate that it is a valuable form of treatment for cases manifesting acute and subacute forms of the disease. All but 2 of the patients with acute bursitis were relieved of pain, and the majority were well in one week or less. The responses in the subacute group were not as prompt, but more than two thirds reported complete relief of pain in two weeks or less and only a few were not benefited. Only one third of the group with chronic symptoms were cured, and almost 50 per cent reported no relief of pain.

American Practitioner, Philadelphia

1:57-112 (Oct.) 1946

Diagnosis of Surgical Lesions of Thorax. V. Richards.—p. 57.
Streptomycin in Clinical Practice: Review and Case Reports. H. J. Morgan and J. S. Hunt.—p. 73.
Urologic Complications of Pregnancy and Labor. R. McCaffery and E. Hess.—p. 87.
Problem of Hypertension. A. Weinstein.—p. 95.
Salient Features of Diagnosis of Chronic Rheumatic Valvular Heart Disease: Illustrative Cases. D. W. Chapman and J. A. Greene.—p. 101.
Anesthesia in Geriatric Practice. R. A. Hingson.—p. 105.

Annals of Internal Medicine, Lancaster, Pa.

25:773-892 (Nov.) 1946

*Observations on Amebiasis in American Troops Stationed in India. G. Klatskin.—p. 773.
Management of Amebiasis. M. M. Karl and F. R. Sloan.—p. 789.
Acute Pericarditis: Study of 18 Cases Among Service Personnel. R. E. Smalley and J. C. Ruddock.—p. 799.
*Treatment of Hyperthyroidism with Propylthiouracil. E. B. Astwood and W. P. VanderLaan.—p. 813.
Observations on Use of Thiouracil. W. S. Reveno.—p. 822.
Diamidines in Chemotherapy: Survey of Recent Developments, with Note Regarding Therapeutic Trials in Patients with Rheumatoid Arthritis. E. F. Rosenburg.—p. 832.

Amebiasis in American Troops in India.—Klatskin reviews observations on 748 cases of amebiasis seen in American troops stationed in India. The clinical features were mild to moderate intermittent diarrhea, often accompanied with other gastrointestinal symptoms. Amebiasis was a common cause of urticaria and angioneurotic edema. Amebiasis of the liver was a common complication and varied in severity from an acute abscess to a low grade chronic hepatitis. Emetine alone cured 68 of the 69 cases. In some cases appendicitis appeared to be due directly to the ameba, while in others it appeared that the ameba had played a secondary role in opening avenues for bacterial infection. The most reliable diagnostic procedure was the demonstration of the trophozoites of Endameba histolytica in fresh stools passed after a large saline purge. The routine administration of moderate doses of emetine improved the end results of treatment with chiniofon, carbarsone and diodoquin. Serious toxic reactions were rare, even with large doses of emetine, when the patient was kept at bed rest and observed carefully.

Propylthiouracil in Hyperthyroidism.—Propylthiouracil having been proved the most active substance in several hundred compounds that have been studied in animals, it was used by Astwood and VanderLaan in 100 unselected cases of hyperthyroidism. Considerable individual variation in the minimal effective dose was observed, some patients requiring as little as 50 and some others as much as 150 mg. daily to restore metabolic equilibrium. It was concluded that 50 mg. every eight hours is approximately the optimal dose for the routine treatment of the more severe cases, that 50 mg. twice daily is adequate for milder ones, and that an effective dose should be continued until all manifestations of the disease have been controlled before smaller maintenance doses are substituted. The use of this medication was unattended with significant side effects.

Archives of Neurology and Psychiatry, Chicago

56:489-608 (Nov.) 1946

Effect of Glutamic Acid on Mental Functioning in Children and in Adolescents. F. T. Zimmerman, B. B. Burgemeister and T. J. Putnam.—p. 489.
Neurologic Mechanism for Certain Phenomena in Tetany. E. Kugelberg.—p. 507.
Circulation of Cerebrospinal Fluid in Carassius Gibelio. T. G. van Rijssel.—p. 522.
Electrical Resistance of Skin: Effect of Size of Electrodes, Exercise and Cutaneous Hydration. I. H. Blank and J. E. Finesinger.—p. 544.
*Neurologic Disease Following Infections of Throat and Skin and Incidence of Diphtheritic Infections. L. H. Bronson.—p. 558.
*Intravenous Injection of Sodium Amytal as Test for Latent Anxiety. S. Susselman, F. Feldman and S. E. Barrera.—p. 567.

Neurologic Disease After Infections.—Bronson says that a neurologic syndrome apparently infectious in origin has been reported among the members of the armed forces of the United States in the recent war. Some investigators have assumed that the disorder was caused by infection with Corynebacterium diphtheriae. There is, however, considerable reason to doubt that C. diphtheriae is the sole etiologic agent. Thirteen patients with a postinfectious neurologic syndrome were studied in a general hospital in Australia in 1943. Attempts to isolate a filtrable virus were unsuccessful. There was no evidence to suggest that the condition was the result of diphtheritic infection. Sixty patients with a similar disturbance were studied at Moore General Hospital in 1945. Of these, the neurologic syndrome followed proved cutaneous diphtheria in 5, proved faucial diphtheria in 2 and severe sore throat which was probably diphtheritic in 5 others. There was no evidence to suggest that diphtheritic infection had played any part in the disease of the remaining 48 patients.

Sodium Amytal in Testing for Latent Anxiety.—Susselman and his associates state that sodium amytal in doses of 1½ grains (0.1 Gm.) given intravenously will frequently relieve a symptom which is entirely due to tension within one to five minutes. The same amount of sodium amytal will relieve that portion of the symptom due to tension in instances in which tensional pain is superimposed on pain of organic cause. Thus sodium amytal can be used as a diagnostic test to separate symptoms of organic disease from tension symptoms. The test should be used only to supplement thorough physical and psychiatric investigation.

Archives of Otolaryngology, Chicago

44:517-646 (Nov.) 1946

Sarcoma of Larynx: Report of 8 Cases. L. H. Clerf.—p. 517.
Significance of Deep Epidural Abscesses in Pathogenesis of Otogenic Abscesses of Brain. F. Altmann and S. Karatay.—p. 525.
Appraisal of Fenestration Operation: Report of 100 Cases. K. M. Day.—p. 547.
Stenosis of Larynx of Limited Extent: Simplified Treatment. E. P. Cardwell.—p. 560.
Allergic Nose. K. M. Houser.—p. 565.
Progress in Otolaryngology: Summaries of Bibliographic Material Available in Field of Otolaryngology; Paranasal Sinuses. S. Salinger.—p. 585.

Bulletin New York Academy of Medicine, New York

22:563-620 (Nov.) 1946

Medical Genetics and Public Health: Twenty-First Hermann M. Biggs Memorial Lecture. L. H. Snyder.—p. 566.
Fibrous Dysplasia of Bone. H. L. Jaffe.—p. 588.
Surgical Principles in Wound Management. F. B. Berry.—p. 605.

22:623-678 (Dec.) 1946

*Indications for Surgery in Treatment of Gastric and Duodenal Ulcers. J. W. Hinton.—p. 623.
Observations on Dynamics of Systemic Circulation in Man. D. W. Richards Jr.—p. 630.
Human Bartonella Infection and African Sleeping Sickness. D. Weinman.—p. 647.

Indications for Surgery in Gastric and Duodenal Ulcers.—Hinton says that the patient with gastric ulcer is more likely to be recommended for an operation than the patient with a duodenal ulcer because of the danger of malignant degeneration in gastric ulcer. In not more than 10 per cent of gastric ulcers should there be a question as to the diagnosis. In the questionable cases an immediate operation should be advised. Gastric ulcers respond more readily to medical management than do duodenal ulcers. The mortality from routine subtotal resections for gastric ulcer far exceeds the possibility of malignant degeneration in cases in which operation is not performed. Only those duodenal ulcers which fall in the chronic intractable group should be operated on. So-called pyloric obstruction is not an indication for operation. Massive hemorrhage in the majority of cases should be treated conservatively with blood transfusion.

Illinois Medical Journal, Chicago

90:201-248 (Oct.) 1946

Management of Persistent Occiput Posterior, with Note on Technic of Forceps Rotation by Stillman Procedure. D. N. Danforth.—p. 212.
Indications for Antibiotics (Penicillin and Streptomycin) in Urinary Tract Infections. R. D. Herrold.—p. 216.
*Vocational Rehabilitation in Illinois. E. F. Pearson and D. Darling. —p. 221.
Hazards in Use of Sedatives: Bromide Intoxication. F. G. Norbury. —p. 223.
Newer Aspects in Treatment of Liver Diseases. G. O'Brien.—p. 227.
Accidental Myiasis in Osteomyelitis Patient Within Well Screened Hospital. W. M. Reid and H. M. Camp.—p. 231.

Vocational Rehabilitation in Illinois.—It is the responsibility of the Illinois Division of Vocational Rehabilitation to help in the vocational rehabilitation of the estimated 56,000 persons who can be aided to become productive. Pearson and Darling think that members of the medical profession should be familiar with the division and its services in order to give information to the handicapped. The deaf and hard of hearing, epileptic, cardiac, tuberculous and blind patients, the orthopedically crippled, the mentally ill and others are eligible for service if there is a reasonable possibility that the individual will be able to engage in an occupation after rehabilitation. Services available include surgical care, medical care and psychotherapy, specialist's care in all fields, hospitalization up to ninety days for any one disability, physical therapy and occupational therapy, prosthetic devices and the like. After the patient is physically ready for employment he may be trained for a job. In Illinois it cost approximately $186 last year to rehabilitate an individual, but it cost as much as $500 each year to support a dependent handicapped person.

Journal of Experimental Medicine, New York

84:403-534 (Nov.) 1946

*Immunity in Experimentally Induced Infectious Hepatitis. W. P. Havens Jr.—p. 403.
*Immunity in Mumps: VI. Experiments on Vaccination of Human Beings with Formolized Mumps Virus. J. Stokes Jr., J. F. Enders, Elizabeth P. Maris and L. W. Kane.—p. 407.
Studies on Herpetic Infection in Mice: IV. Effect of Specific Antibodies on Progression of Virus Within Nervous System of Young Mice. C. A. Evans, H. B. Slavin and G. P. Berry.—p. 429.
Properties of T Antigens Extracted from Group A Hemolytic Streptococci. Rebecca C. Lancefield and V. P. Dole.—p. 449.
Pressure and Interstitial Resistance Prevailing in Normal and Edematous Skin of Animals and Man. P. D. McMaster.—p. 473.
Effects of Venous Obstruction on Interstitial Pressure in Animal and Human Skin. P. D. McMaster.—p. 495.
Chemical Studies on Host-Virus Interactions: I. Effect of Bacteriophage Adsorption on Multiplication of Its Host, Escherichia Coli B, with Appendix Giving Some Data on Composition of Bacteriophage. S. S. Cohen and T. F. Anderson.—p. 511.
Id.: II. Chemical Simulation of Interference Phenomenon by 5-Methyl Tryptophan. S. S. Cohen and T. F. Anderson.—p. 525.

Immunity in Infectious Hepatitis.—Havens found that 9 human volunteers convalescent from experimentally induced infectious hepatitis were resistant when reinoculated with the same strain of virus six to nine months later. Eight out of 12 previously healthy control subjects developed infectious hepatitis with jaundice following administration of this same material.

Vaccination with Formolized Mumps Virus.—Stokes and his associates inoculated active mumps virus into 41 vaccinated and 32 unvaccinated children after obtaining the consent of parents or guardians. The result obtained indicated that mumps virus obtained from the parotid gland of the infected monkey and inactivated by formaldehyde and then used as a vaccine increased the resistance of about half of those to whom it was administered.

J. of Industrial Hygiene & Toxicology, Baltimore

28:243-282 (Nov.) 1946

Evaluation of Beta and Gamma Radiation Due to Extended Linear Sources of Radium. R. D. Evans.—p. 243.
Determination of Mercury in Air. E. C. Barnes.—p. 257.
Further Studies on Sensory Response to Certain Industrial Solvent Vapors. L. Silverman, H. F. Schulte and M. W. First.—p. 262.
Case of Fatal Poisoning from 2-Methoxy-Ethanol. E. G. Young and L. B. Woolner.—p. 267.
Modified Cascade Impactor: Device for Sampling and Sizing Aerosols of Particles Below One Micron in Diameter. L. S. Sonkin.—p. 269.
Apparatus for Dispersing Finely Divided Dusts. L. S. Sonkin, M. A. Lipton and D. Van Hoesen.—p. 273.
Estimation of Sulfur Compounds in Air. B. Feiner, W. J. Burke and S. Moskowitz.—p. 276.
Industrial Hygiene Survey of Onion Dehydrating Plant. B. Feiner, W. J. Burke and J. Baliff.—p. 278.

Journal of Lab. and Clinical Medicine, St. Louis

31:1165-1278 (Nov.) 1946

Subcutaneous vs. Intramuscular Administration of Penicillin. W. S. Hoffman.—p. 1165.
Permeability Alterations in Disease. R. R. Overman.—p. 1170.
Glycocyamine Elimination in Patients with Myasthenia Gravis. Clara Torda and H. G. Wolff.—p. 1174.
Erythrocyte Fragility in Acute Infectious Hepatitis. D. F. Bohr, —p. 1179.
*Treatment of Macrocytic Anemia with *Lactobacillus Casei* Factor (Pteroylglutamic Acid). Grace A. Goldsmith.—p. 1186.
Studies in Iron Transportation and Metabolism: V. Utilization of Intravenously Injected Radioactive Iron for Hemoglobin Synthesis, and Evaluation of Radioactive Iron Method for Studying Iron Absorption. Reubenia Dubach, C. V. Moore and Virginia Minnich.—p. 1201.
Serum Lysolecithin in Rheumatoid Arthritis, Pregnancy and Jaundice and in Normal Persons. W. C. Kuzell and R. A. Davison.—p. 1223.
Retained Median Lethal Dose, Percentage Retention and Respiratory Response in Unanesthetized, Intact Rabbits and in Unanesthetized, Tracheotomized Dogs and Rabbits Exposed to Phosgene by Dosimetric Method. R. E. Weston and L. Karel, with technical assistance of D. R. LaGrave and P. A. Gogins.—p. 1227.
Chromogenic Reactions to Halogenation of Pregnancy Urine. A. C. Barnes.—p. 1240.
Some Observations on Severe Diabetic Ketosis Treated with Glucose and Insulin. A. P. Briggs.—p. 1244.
Effect of Glycerophosphate on Blood Coagulation and on Blood Clot Retraction. R. D. Barnard.—p. 1249.
Blue Fluorescent Substance in Urine. D. S. Stevens and G. F. Dick. —p. 1251.

Treatment of Macrocytic Anemia with Lactobacillus Casei Factor.—Goldsmith administered L. casei factor (pteroylglutamic acid) to 15 patients between the ages of 4 and 69 with anemia. The dose varied from 5 to 120 mg. daily. Five of the patients have been studied for more than six months. Two patients with pernicious anemia, 4 with nutritional macrocytic anemia and 1 with normocytic anemia in which the bone marrow was depressed showed pronounced clinical and hematologic improvement when L. casei factor was given as the sole therapeutic agent. Two patients with sprue and 1 with a celiac syndrome improved in certain respects, but the blood picture was altered in only 1 instance. L. casei factor was ineffective in the treatment of 2 patients with aplastic anemia and of 1 patient each with macrocytic anemia associated with regional ileitis and myxedema and macrocytic anemia of unknown origin.

Journal of Nutrition, Philadelphia

32:467-582 (Nov.) 1946. Partial Index

Nutritional Studies with Ducks: III. Niacin Deficiency. D. M. Hegsted.—p. 467.
Intravenous Utilization of Partial Acid Hydrolysates of Proteins. W. C. Risser, J. R. Schenck and D. V. Frost.—p. 499.
Protein Deprivation as Cause of Vascularization of Cornea in Rat. W. K. Hall, V. P. Sydenstricker, C. W. Hock and L. L. Bowles. —p. 509.
Dental Caries in Syrian Hamster: II. Preliminary Study of Effect of Three Different Rations on Caries Activity. P. H. Keyes.—p. 525.
Growth and Maintenance Utilization of Dietary Protein. R. H. Barnes, Mary J. Bates and Jean E. Maack.—p. 535.
*Observations on Pellagra in American Prisoners of War in Philippines. C. F. Lewis and M. M. Musselman.—p. 549.
Photosensitized Oxidation of Ascorbic Acid in Urine and Blood Serum. Mary L. Dodds, Florence L. MacLeod and Juanita Smith Carr. —p. 559.
Influence of Riboflavin Consumption on Its Concentration in Hen's Eggs. S. H. Jackson, T. G. H. Drake, S. J. Slinger and others.—p. 567.

Pellagra in American Prisoners of War in the Philippines.—Lewis and Musselman say that symptoms of pellagra first appeared with dramatic suddenness in August 1942. Within symptoms of the disease. They complained of soreness and burning of their mouths and tongues. The tip of the tongue presented the typical raw, spotted appearance. Later ulcerations appeared on the tongue. The angles of the mouth became macerated and presented a perlèche-like membrane. A seborrheic lesion appeared about the alae of the nose and spread over the lips and chin. The skin lesions were more extensive than those usually described as pellagrous. Processed foods, a crude yeast culture and pure vitamin preparation were effective in controlling pellagra. Pure vitamin preparations were more effective when the diet was more adequate. The daily multivitamins utilized during 1944 reduced the incidence of the severe pellagra seen in 1942 and 1943.

Rocky Mountain Medical Journal, Denver

43:869-956 (Nov.) 1946

Health Insurance and the Nation. L. S. Goin.—p. 890.
*Dihydroergotamine (D. H. E. 45), New and Effective Drug in Treatment of Migraine. L. A. Pollock.—p. 895.
Management of Infertility of Short Duration. R. L. Young.—p. 897.

Dihydroergotamine (D. H. E. 45) in Migraine.—Pollock presents brief histories of 17 patients with migraine in which he employed dihydroergotamine, known also as D. H. E. 45. Prophylactic treatment (0.5 cc. once or twice a week) was found beneficial in prolonging the interval and easing the severity of attacks. During a full blown attack of migraine, 1 to 1.5 cc. intravenously aborts an attack within fifteen to twenty minutes in many cases. The substance is not particularly effective in hypertensive cases.

Union Médicale du Canada, Montreal

75:1241-1584 (Nov.) 1946. Partial Index

Late Adenopathy in Certain Cancers of Inferior Lip. A. Marin.—p. 1365.
Prenatal Examination. D. Marion.—p. 1372.
Part of Rh Factor in Erythroblastosis of Newborn. A. Bertrand.—p. 1384.
*Contribution to Study of Lipoma of Corpus Callosum. R. Amyot.—p. 1391.
*Angina Pectoris and Anemia. H. Gélinas.—p. 1407.
Purulent Tuberculous Pleurisy and Pleural Lavage. J. P. Paquette.—p. 1412.
Diverticula of Colon and Diverticulitis. A. Pettigrew.—p. 1438.
Hematogenic Role of Liver in Digestive Syndromes: Vitamin K, Sympathetic Nervous System, Action of Certain Hormones (7 Cases). J. LeSage and A. Arcand.—p. 1446.
Sterility. F. X. Demers.—p. 1462.
Elastose of Cholecyst: Anatomic, Clinical, Roentgenologic and Pathogenic Considerations on So Far Neglected Lesion of Gallbladder. J. L. Riopelle.—p. 1486.
Thyroidectomy Under General Anesthesia. M. Plamondon.—p. 1513.
Classification of Rheumatismal Syndromes. R. Dandurand.—p. 1517.
Splenectomy and Diseases of Blood. R. Dussault.—p. 1523.
Treatment of Refractory Otitis in Suckling Infant with Injections of Penicillin in the Tympanic Cavity. N. Vézina.—p. 1557.

Lipoma of Corpus Callosum.—Amyot reports a lipoma of the corpus callosum in a woman aged 39 who since her childhood had suffered from severe headache and for the last four years from convulsive attacks. Diagnosis was made with the aid of pneumoencephalography. A mental syndrome of frontal type and a right hemiplegia resulted from the surgical removal of the lipoma. This postoperative neuropsychic symptomatology may be ascribed to the lesion of the corpus callosum associated with a left frontal softening.

Angina Pectoris and Anemia.—Gélinas reports the occurrence of pernicious anemia associated with angina pectoris in a man who for the past few months had suffered from severe retrosternal pain on walking, from anorexia and from weakness. The blood count revealed 1,400,000 red and 4,000 white blood corpuscles. The hemoglobin was reduced to 42 per cent. The patient received six intramuscular injections of 2 cc. of liver extract containing 15 antianemic units per cubic centimeter in ten days. The retrosternal pains subsided within five days. In the absence of any other treatment, one injection of 2 cc. of the liver extract twice a month was sufficient for the control of the anemia. The patient did not experience any precordial pain for four years.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

2:761-804 (Nov. 23) 1946

Physiologic Rest, with Special Reference to Arthritis and Nerve Lesions and to Manufacture of Appliances. N. Capener.—p. 761.
Effect of Certain Social Conditions on Health of School Children E. R. Bransby, J. L. Burn, H. E. Magee and D. M. MacKecknie.—p. 767.
Evaluation of Barrier Creams. C. G. A. Sadler and R. H. Marriott.—p. 769.
Aid to Measurement of Venous Filling in Neck in Congestive Heart Failure. A. W. D. Leishman.—p. 773.
Coronary Disease: Passages from Harveian Oration. M. Cassidy.—p. 782.
Deficiency Neuropathies Observed in Madrid During the Civil War (1936-1939). M. Peraita.—p. 784.

2:805-844 (Nov. 30) 1946

Chemotherapy of Tuberculosis: Research During Past 100 Years (Part I). P. D'Arcy Hart.—p. 805.
*Weil's Disease: Rare Condition? K. Robertson.—p. 810.
Unusual Case of Weil's Disease. *H. Jackson and S. Oleesky.*—p. 813.
Gravity Drainage in Prone Position in Treatment of Digestive Fistulae of Abdominal Wall. D. H. Patey, J. H. L. Ferguson and M. D. Exley.—p. 814.
Case of Cerebral Malaria in Great Britain. J. B. Ryder and R. T. Towson.—p. 815.
Kala Azar with Onset of Symptoms in Great Britain. A. Feldman.—p. 816.

Weil's Disease.—Robertson reports 40 cases of Weil's disease occurring between the ages of 5 and 78 years. The condition was encountered four or five times every year during the period of the last ten years. Nearly 50 per cent of the cases have been diagnosed within the first four days of the illness and specific treatment started. The blood urea level has been raised from the earliest stages in all the cases. Its determination is the most important single pathologic investigation. A careful inquiry into the patient's work, home surrounding and habits with regard to bathing in fresh water is of the utmost importance. Twelve patients have been given specific antileptospiral serum during the first four days of the illness and one other received penicillin within the first two days. In this group there has been no mortality. This compares favorably with the remainder of the patients, none of whom received treatment until after the fourth day and among whom there were six fatalities—a mortality of 30 per cent. Penicillin when used freely during the early septicemic stage may be of greater usefulness than serum. Fifty per cent glucose intravenously (50 cc. every eight hours) proved valuable. The mechanism of cortical renal ischemia is of great importance in the etiology of the syndrome of water and nitrogen retention seen in the more severe cases of Weil's disease and may explain the apparent success of spinal analgesia in reestablishing renal function by invoking sympathetic release. The need for early use of this treatment in oliguric cases is emphasized.

Lancet, London

2:739-778 (Nov. 23) 1946

Absorption and Excretion of Water: Antidiuretic Hormone. E. B. Verney.—p. 739.
*Lung Lesions in Skeletal Tuberculosis: Review of 500 Cases. K. J. Mann.—p. 744.
**Anuria Treated by Renal Decapsulation and Peritoneal Dialysis.* R. Reid, J. B. Penfold and R. N. Jones.—p. 749.
Acute Infectious Mononucleosis Complicated by Encephalomyelitis: Report of Case. S. Geliebter.—p. 753.
Repeated Abortions, Miscarriages and Stillbirths: Value of Antisyphilitic Treatment. R. G. Cross.—p. 754.

Lung Lesions in Skeletal Tuberculosis.—Studies of the respiratory tract of 500 patients with skeletal tuberculosis revealed active pulmonary lesions in 284, or 57 per cent. This is in agreement with figures obtained by other observers. The primary complex was found in most of the children, and hematogenous foci in adults. The respiratory tract thus appears to be the route of entry of the tubercle bacillus even in skeletal tuberculosis. The infecting organism is therefore most likely to be the human type from human open pulmonary cases. Milk infected with bovine tubercle bacilli can no longer be considered an important source of skeletal tuberculosis. The skeletal lesion in most children originates soon after the primary infection. In most adults it is due to reactivation of quiescent tuberculous foci resulting in blood stream dissemination and subsequent implantation in bone and lung. Mann emphasizes the importance of routine radiography of the chest in the diagnosis and prognosis of skeletal tuberculosis.

Anuria Treated by Renal Decapsulation and Peritoneal Dialysis.—Reid and his associates report a case in which an incompatible blood transfusion was followed by uremia. It was unsuccessfully treated by all the commonly recognized methods and finally yielded to decapsulation of the kidneys, the associated uremia being relieved by the use of the peritoneum as a dialysing membrane. Twice normal saline solution was given intraperitoneally by drip injection, and later the fluid was drained off. By this method much urea was eliminated by dialysis through the peritoneum, with relief of uremic symptoms. Reid and his associates state that the patient, a woman, fully recovered.

Medical Journal of Australia, Sydney

2:613-648 (Nov. 2) 1946

Zoological Position of Man. A. N. Burkitt.—p. 613.
Some Recent Changes in Outlook for Child. F. V. G. Scholes.—p. 617.
Modern Treatment of Pulmonary Tuberculosis. C. H. Fitts.—p. 622.
Portable, Self-Contained Apparatus for Induction and Maintenance of Continuous Intravenous Anesthesia, with Some Observations on Use of "Pentothal Sodium." R. V. Pratt.—p. 626.
Effect of Intravenously Administered Antimony Compounds on Pyogenic Skin Lesions. A. T. H. Jolly.—p. 630.

South African Medical Journal, Cape Town

20:687-730 (Nov. 23) 1946. Partial Index

Facts About Alcoholism. L. Bosman.—p. 688.
*Curare in Shock Treatments for Mental Disorders. M. J. Cohen.—p. 706.
Some Pharmacologic Aspects of Sulfonamides, Penicillin and Streptomycin. N. Sapeika.—p. 708.
Extraperitoneal Cesarean Section. P. H. Oosterhagen.—p. 712.
*Another Case of Successful Prostatectomy in the Tenth Decade. W. de V. Scholtz.—p. 718.

Curare in Shock Treatments for Mental Patients.—Cohen used curare in the form of intocostrin in treating 14 patients undergoing shock treatment for psychoses. He found it most useful. Not only does it prevent fractures and painful spasm of muscles, but in cases in which painful spasm already exists curare can be used to allow treatment to proceed. It was quite common formerly to drop treatments owing to painfulness. Alcoholic addicts do not respond so well to this treatment. Cyanosis and respiratory difficulties are greater. Hence neostigmine should be used to neutralize the curare as soon as the convulsions are over. There is less recollection of the treatment and less fear if curare is used with shock therapy.

Successful Prostatectomy in the Tenth Decade.—Scholtz adds his report of a successful two-stage suprapubic prostatectomy performed on a man aged 91 to a report of 2 similar cases treated by Frater. The patient continued to be well more than two years later.

Presse Médicale, Paris

54:665-676 (Oct. 12) 1946

Traumatic Tuberculosis. P. Moiroud.—p. 665.
*White Blood Formula in Cirrhoses of Liver. P. de Graciansky and M. Mouzon.—p. 665.
Consequences of World War II in Czechoslovakia from Psychiatric Point of View. O. Janota.—p. 667.

White Blood Formula in Cirrhoses of Liver.—De Graciansky and Mouzon studied the white blood picture in 114 cases of cirrhosis of the liver. Seventeen cases of cirrhosis associated with pulmonary or cutaneous infection, with massive visceral hemorrhage and cases of Banti's disease were excluded as possible sources of error. Neutrophil polynucleosis was demonstrated in 92 of the remaining 97 cases, and it was associated with a myelocyte reaction in 19 cases. The importance of the neutrophil polynucleosis equals that of anemia and of thrombopenia in the hematologic syndrome of cirrhosis; in addition, the neutrophil polynucleosis represents an element of unfavorable prognosis. Essential eosinophilia may on the contrary be considered a favorable sign, while aneosinophilia suggests an unfavorable prognosis.

Journal Belge d'Urologie, Brussels

14:345-398 (Aug.) 1946

Retropubic Prostatectomy. T. Millin.—p. 345.
My First Retropubic Prostatectomies (Millin's Operation). A. C. Wasterlain.—p. 357.
Ureter of Ptotic Kidneys and Nephropexy. M. Chevassu.—p. 367.
Ureterography of Pelvic Ureter. M. Chevassu.—p. 373.
*Treatment of Cancer of Prostate with Estrogenic Substances. J. A. Weijtlandt.—p. 375.

Treatment of Cancer of Prostate with Estrogenic Substances.—Weijtlandt treated 12 patients with cancer of the prostate with estrogenic substances. In general intramuscular administration is preferred with 5 mg. of diethylstilbestrol or 10 mg. of dimenformon (estradiol) daily for two to three weeks. The same dose may then be administered three or two times or once a week. After one or two months of this treatment a weekly maintenance dose of 2.5 mg. of diethylstilbestrol or 5 mg. of estradiol is suggested. No untoward reactions were observed in spite of large total doses up to 1,000 mg. except for occasional gynecomastia, which subsided when the treatment was discontinued.

Schweizerische medizinische Wochenschrift, Basel

76:1051-1074 (Oct. 12) 1946

Maturation Period, Duration of Mitosis and Daily Changes in Granulated Leukocytes. S. Moeschlin.—p. 1051.
*Diagnosis of Splenic Rupture. J. Bieri.—p. 1053.
*Use of Emetine in Pyogenic Infections. E. Melchior.—p. 1054.
Influence of Sauna (Finnish) Bath on Cold Reactions of Cutaneous Vessels. W. Jung.—p. 1058.
Practice of Plasma Transfusions. S. von Salis.—p. 1062.

Diagnosis of Splenic Rupture.—Bieri observed lymphopenia in the presence of leukocytosis within a few hours after rupture of the spleen in 3 cases. For instance there was a decline in lymphocytes from 10 per cent to 3 per cent in one hundred and five minutes and from 16 per cent to 7 per cent in ninety minutes. Thus, if splenic rupture is suspected the diagnosis can be corroborated by investigation of the number of lymphocytes. The blood picture should be examined also in intra-abdominal hemorrhages that are not caused by splenic rupture.

Emetine in Pyogenic Infections.—Melchior found that hepatic abscesses observed in Ankara respond to emetine, although the majority of these abscesses are not caused by amebic dysentery. Emetine has proved effective also in nonamebic pulmonary abscesses and in various acute surgical infections that are accompanied with pus formation. The author presents 17 cases in which emetine proved successful after surgical treatment alone had failed to cure. The cases included among others postoperative peritonitis, furuncles, phlegmons, pleural empyemas, septicemia, renal abscess and dental infections.

Medicina, Madrid

14:165-244 (Sept.) 1946. Partial Index

*Comparative Study of Skin Reactions to Injections of Either Tuberculin or BCG Cultures. F. Civeira and R. Urioste.—p. 175.
Atypical Pain in Coronary Infarct. M. M. Frade Fernández.—p. 179.

Skin Reactions to Tuberculin and BCG Cultures.—Civeira and Urioste gave intracutaneous injections of solutions of either tuberculin or BCG in progressive concentrations to 18 patients with tuberculosis. The concentrations used for the first injections were 1: 1,000,000 for tuberculin and 1: 10,000,000 for the BCG cultures. A reaction of visible and palpable infiltration and erythema 10 mm. in diameter denoted the threshold of positivity. There is no relation between the threshold of positivity to the injection of tuberculin and to that of BCG cultures. The type of skin reaction is different for one or the other reactive agent. High concentration of BCG cultures may cause either local false reaction because of a personal sensitization to albumin or local formation of minute abscesses. The causes and mechanism of either tuberculin or BCG positive reaction are different.

Wiener klinische Wochenschrift, Vienna

58:621-640 (Oct. 25) 1946

*Panaris and Its Treatment During Office Hours. E. Domanig.—p. 621.
Diseased Heart. H. Schnetz.—p. 622.
Focal Infection in Internal Medicine. J. Sandhofer.—p. 626.
Treatment of Fractures by Practitioner. J. Hohenwallner.—p. 628.
Pelvic Presentation and Its Treatment. J. Wegleiter.—p. 629.
Antisyphilitic Treatment. H. Rotter.—p. 631.
Pulmonary Tuberculosis in Children. G. Zederbauer.—p. 633.
Acute Otitis. Chlanda.—p. 635.
Roentgen Treatment of Acute and Chronic Unspecific Inflammations. H. Stech.—p. 637.

Panaris.—Domanig considers progressive panaris an emergency which requires immediate surgical intervention under conduction anesthesia with 2 cc. of a 2 per cent procaine hydrochloride solution or under mild narcosis. Deep proximal and distal incisions should be made at the area of the most pronounced swelling and of the severest pain; they should be extended to the healthy tissues under visual control, which may be insured by using Esmarch's bandage. Patients with involvement of tendon sheet should be admitted to a hospital. Immobilization with splint and plaster of paris cast is imperative, and change of dressing should not be performed earlier than on the fifth or sixth postoperative day.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

90:1291-1358 (Oct. 5) 1946

Reversible Form of Megacolon. F. L. J. Jordan.—p. 1292.
Bronchogenic Cyst of Mediastinum. L. D. Eerland.—p. 1295.
Spinous Processes of Human Vertebral Column. E. J. Slijper.—p. *1298.*
Treatment of Scabies Among Prisoners of War in India. R. D. G. P. Simons.—p. 1307.
Experimental Epidemic Hepatitis. J. D. Verlinde.—p. 1309.
*Treatment of Lupus Vulgaris with Vitamin D_2 and Calcium. E. H. Hermans.—p. 1312.

Vitamin D_2 and Calcium for Lupus Vulgaris.—The new treatment for lupus vulgaris recommended by Hermans was first described by Charpy in 1943. During the first week of treatment the patients are given 3 times 15 mg. of vitamin D_2 in alcoholic solution (1 mg. contains 40,000 units). After that they are given the 15 mg. twice a week. The calcium is provided by giving from 1 to 2 liters of milk daily and on twenty days each month 0.5 Gm. of calcium gluconate. This form of oral heliotherapy has produced favorable results, but it involves some danger of excessive dosage of vitamin D.

Acta Medica Scandinavica, Stockholm

125:191-294 (Aug. 31) 1946

*Thresher's Lung: Fungoid Disease Resembling Tuberculosis or Morbus Schaumann. E. Törnell.—p. 191.
Blood Changes Brought on by Metastatic Invasion of Bone Marrow. P. Dustin Jr.—p. 220.
*Erythroblastosis in Adults. N. G. Nordenson.—p. 236.
Infections of Urinary Tract: I. Frequency of Urinary Infections. L. Loopuyt.—p. 245.
Necrobiosis Lipoidica Diabeticorum. D. Elstad.—p. 257.
Treatment of Hyperthyroidism with Methylthiouracil. P. Magnusson and G. Sorensen.—p. *263.*
*Occurrence of Diphtheria in Recent Years, with a Special View to Influence of Antidiphtheric Vaccination. V. Mortensen.—p. 283.

Thresher's Lung.—Törnell describes 8 cases of thresher's lung. This condition is caused by the inhalation of dust from molded ("burned") grain. In the severe cases the onset is sudden, accompanied with shivering, fever, malaise and cough with mucopurulent or sanguinolent expectoration, and dyspnea. Eye symptoms and rhinitis may also occur. The clinical signs include a bronchial catarrh at the bases with dry subcrepitation, mild leukocytosis and an increased sedimentation rate. The x-ray picture resembles that of miliary tuberculosis. In severe cases the densities increase and merge into a disseminated patchy fibrosis with bronchiectasis. Cultivation of sputum samples on Sabouraud's medium yields Monilia, a yeastlike fungus; that is, thresher's lung is a bronchomoniliasis. Treatment with potassium iodide seemed to exert a noticeable influence on the mild cases of thresher's lung.

Erythroblastosis in Adults.—Nordenson reports 3 cases of erythroblastosis in adults. The disease is chronic, and the anemia is resistant to all treatments. There is considerable splenomegaly, and the red and white blood pictures are very immature because of an extramedullary hemopoiesis, which can be demonstrated by a splenic puncture. Even in cases in which the blood picture is atypical there exists a characteristic splenogram. The sternal marrow is hypoplastic. The liver function seems to be normal, and there are no signs of increased hemolysis. The etiology of the disease is unknown, and there is no effective treatment. Splenectomy is contraindicated.

Diphtheria in Recent Years.—Reviewing a material of 573 cases of diphtheria from the period between 1939 and 1945, Mortensen finds that diphtheria has been more frequent in 1944 and 1945 than during the preceding years. The age distribution has shifted in that in 1944-1945 only about one third of all the patients were children, as against about three fourths in the preceding years. Antidiphtheric vaccination has protected the children. The case mortality was 9.3 per cent for the nonvaccinated patients and 1.1 per cent for the vaccinated. The disease was milder in the vaccinated patients than in the nonvaccinated, and complications were far more frequent in the latter. Among the factors that contributed to the rise in diphtheria morbidity the author mentions greater possibilities of infection owing to poor hygienic conditions during the war and lowered resistance in the last years of the war.

125:295-394 (Sept. 7) 1946

*Paroxysmal Tachycardia, Transitory Flutter and Fibrillation. O. Jervell.—p. 295.
Treatment of Leukopenia and Granulocytopenia with Pyridoxine (Vitamin B_6). D. Knutson, C. O. Oldfelt and P. Wising.—p. 326.
Hydremia in Acute Nephritis. E. L. Cardozo.—p. 333.
*Patent Ductus Botalli in Three Sisters. H. Kjaergaard.—p. 339.
Contribution to Knowledge of Acute Primary Atypical Pneumonia. H. Stenqvist.—p. 345.
Infections of Urinary Tract: II. Therapeutic Results. L. Loopuyt.—p. 357.
Addison's Disease: I. Remarks Regarding Its Clinical Features, Prognosis and Treatment Based on 30 Recorded Cases. O. J. Broch.—p. 371.
Index of Renal Tubular Reabsorption. J. A. Barclay and R. A. Kenney.—p. 386.

Paroxysmal Tachycardia, Transitory Flutter and Fibrillation.—Jervell investigated 168 cases of paroxysmal tachycardia, including cases of transitory flutter and flutter with fibrillation. This group included 67 cases of degenerative heart disease, 16 with rheumatic, 4 with syphilitic and 11 with thyrotoxic disorders. Seventy patients had no signs of organic heart disease. Among 34 cases of flutter or fibrillation without organic heart disease there was only 1 case of permanent fibrillation. In the other cases the flutter or fibrillation subsided either spontaneously or after treatment. Paroxysmal tachycardia and transitory flutter and fibrillation are probably due to the same causes. The predisposing factor is assumed to consist of structural alterations in the muscle. Besides degenerative and rheumatic disorders of the myocardium, infections, adiposity and other disorders may be imagined to produce functional derangements. In some cases flutter or fibrillation follows physical exertion, and it is suggested that certain persons are predisposed to flutter and fibrillation. Increased tonus of the sympathetic probably plays a part in most cases. A number of case histories are reported which support the view that both a predisposing and a provocative factor play a part in paroxysmal tachycardia and transitory flutter and fibrillation.

Patent Ductus Botalli in Three Sisters.—Kjaergaard describes the histories of three sisters in a family of five children who had patent ductus Botalli. The parents were well, not related and gave no history of heart lesions. The oldest daughter, aged 11, and a boy aged 2 were free from the cardiac defect, but 3 girls aged 7 years, 6 years and 11 months, respectively, had patent ductus Botalli. The author thinks that the entire family ought to be examined whenever an instance of patent ductus Botalli is ascertained and also when any other form of congenital heart lesion is encountered.

Book Notices

The Child from Five to Ten. By Arnold Gesell, M.D., Director of the Clinic of Child Development, School of Medicine, Yale University, New Haven, Connecticut, and Frances L. Ilg, M.D., Assistant Professor of Child Development. In collaboration with Louise Bates Ames,-Ph.D., and Glenna E. Bullis. Cloth. Price, $4. Pp. 475, with illustrations. Harper & Brothers, 49 E. 33d St., New York 16; 90 Great Russell St., London W. C. 1, 1946.

This book, by the director and staff members of Yale Clinic of Child Development, is a campanion work to the earlier volume "Infant and Child in the Culture of Today" (1943). It is based on studies of 50 or more children at age levels 5, 5½, 6, 7, 8, 9 and 10 years. The observations at each level are systematically referred to ten major "fields of behavior," i. e. motor characteristics, personal hygiene, emotional expression, fears and dreams, self and sex, interpersonal relations, play and pastimes, school life, ethical sense and philosophic outlook. After a presentation in cross section of child life at the several age levels the ten areas of behavior are reviewed in panoramic fashion.

The study evidences the carefulness of observation that has made the work of the Yale Clinic such an important contribution to our knowledge of child development. Authentic, lively, realistic descriptions of how children behave, what they say and do and how they react to their environment are presented. The emerging patterns of behavior, modified by the maturing of the developing organism, are traced. The authors are sound in their emphasis on the total complex of a behaving organism in a changing environment.

Yet the student of child life and the clinician will sense the deep lack in this work, the lack that consistently characterizes the fine work of the Yale Clinic. Despite the authors' emphasis in the final chapter on "developmentalism" the work remains consistently on the descriptive level and lacks the dynamic quality that can be imparted to any account of the mental life of a human being only through a synthesizing, dynamic psychology. Such a psychology lurks at the fringes of the authors' comments and is almost desperately sought for in an attempt to attain the needed synthesis. Those aspects of childhood life that have to do with the more subjective mental life, i. e. emotional expression, fears and dreams, self and sex and ethical sense, carefully documented as they are, lose much of their meaning unless understood in terms of the dynamic interplay of psychologic forces actually observable in childhood life. This is not specifically acknowledged or recognized by the authors in relation to their own work. That they are by no means insensitive to this is evidenced by the fact that the best presentation of the subjective state of a child is not derived from their observations but quoted from the autobiographic work of Edmund Gosse. The profound implication to the child on discovering that the father is not infallible is made vividly clear by Gosse's account. Perhaps the "clinical observer" might with some justice maintain that we cannot "observe" a child's subjective state—perhaps we must rely on his ability to report it at a later date. However, a wealth of clinical observation bearing on the subjective life of the child is available in the works of child psychologists and psychoanalysts, together with precisely the sort of integrating dynamic concepts of the development of the childhood personality useful to an understanding of the facts reported so carefully in this work. Indeed, such recording of precise observation is what is required to correct, modify or confirm the current theories of child development.

Also revealing the lack of a basic dynamic psychology is the statement of the authors, in commenting on the possible fate of mankind, that "the intrinsic charm and goodness of childhood still constitute the best guaranty of the further perfectibility of mankind" (page 453). This is a charming sentiment but a highly unscientific statement. The development of ethical concepts furthering a higher order of society is dependent on a process involving the relationship of developing children with ethical parents; processes which involve early conditioning, introjection and identification eventually enable the child to assume the responsible attitudes of the mature adult. It is this process that could profitably be an object of study by the authors of this important book.

The Diagnosis and Treatment of Bronchial Asthma. By Leslie N. Gay, Ph.B., M.D., Assistant Professor of Medicine of the Johns Hopkins University School of Medicine, Baltimore. With a foreword by Warfield T. Longcope, A.B., M.D., Professor of Medicine of the Johns Hopkins University School of Medicine, Baltimore. Cloth. Price, $5. Pp. 334, with 80 illustrations. The Williams & Wilkins Co., Mt. Royal & Guilford Aves., Baltimore 2, 1946.

The author has had about twenty-five years of experience in the field of allergy at Johns Hopkins University and in private practice. This book is an accounting of his experience and is most interesting both because he is a pioneer in this field and because of his special investigations in several aspects of the problems.

The book deals with the physiology of normal respiration and that observed in asthma and then takes up the etiology, pathology, diagnosis, differential diagnosis, complications and treatment of asthma. There is an excellent chapter on the pathology of asthma, with a detailed description of autopsy findings in 24 patients in whom asthma was the sole cause of, or was a factor in, death. The psychosomatic aspects of asthma are well portrayed, better than in any other book on the subject. Many case reports are given, and there are numerous illustrations and tables. The relationship of the nose and nasal sinuses to asthma is well stated, though many physicians are reluctant to advise nasal surgical intervention as frequently as does this author.

This book is not well balanced. The author failed to realize that in a relatively small book he has devoted far too much space to the particular subjects in which he has done special investigative work. Among these are pathology of asthma, the use of potassium salts, oral ragweed treatment, allergic rhinitis, ephedrine and the use of radium for adenoid tissue. His essays on the discovery of helium and on the virtues of Bermuda as a hay fever resort are entirely out of place. In all these subjects a shorter discussion would have been better, and the interested reader should have been referred to other sources for more information. Because of this excessive waste of space there is much too little discussion on the more ordinary but more important phases of treatment. The chapter on etiology is meager; important causes of asthma, e. g., horse dander, are hardly mentioned. More space should have been given for treatment so that the average medical student or physician could better treat his asthmatic patients.

The role of foods in asthma is belittled, though most observers feel that foods are important. There are no diet lists and nowhere can the source of allergens be found. The index is inadequate; it contains no reference to such important allergens as cottonseed and dog, cat or horse dander. Although house dust is an important cause of asthma, there are no special instructions to patients on how to reduce exposure.

Mixtures of extracts, e. g. pollen from ragweed, grass and tree, are given. Many workers object to this procedure because one cannot safely raise dosages during the respective pollen seasons, yet the aim of all is to reach the highest dosage just before the pollen season. The addition of a potent allergen, as cottonseed, to such a mixture is extremely dangerous and ill advised.

The author states (page 120) that "the inaccuracy of this procedure (skin tests by the scratch method) has been recognized by experience and the majority of authorities on this subject prefer the more readily controlled intracutaneous method." This statement is challenged. The scratch tests are widely used and are informative, and they are perfectly safe. Fatalities have occurred and continue to occur even in the hands of specialists who inject their extracts without preliminary scratch tests. Both methods should be used. The bibliography is rather small, though probably sufficient for a book of this size.

Encyclopedia of Psychology. Edited by Philip Lawrence Harriman and Written by Many Contributors. Fabrikoid. Price, $10. Pp. 897, with illustrations. The Philosophical Library, Inc., 15 E. 40th St., New York 16, 1946.

The 900 pages of this book bear testimony to the tremendous accretion of knowledge in this social science. More than 80 eminent psychiatrists, psychologists, psychoanalysts and educators contributed to it, and the mass of the material is well nigh sufficient in its scope to deter the average physician from even beginning to read it. If, however, he can accumulate the time and the courage he will find here much that will be exceedingly useful to him in the problems of his practice. He will wish, however, to read selectively in the special fields related to his medical practice. A mere glance at the headings, such as "Climate and Human Behavior," "Feeblemindedness," "Hypnoanalysis" and "Lobotomy," give an indication of the scope of the book. Each of the sections, which are arranged alphabetically, is supplemented with an extensive bibliography.

Principles of Hematology with 106 Illustrative Cases. By Russell L. Haden, M.A., M.D., Chief of the Medical Division of the Cleveland Clinic, Cleveland, Ohio. Third edition. Cloth. Price, $5. Pp. 366, with 171 illustrations. Lea & Febiger, South Washington Square, Philadelphia 6, 1946.

The third edition of this excellent book adds the technic of bone marrow puncture and the analysis of the marrow films. The section on technic is extremely comprehensive, and the illustrations are unusually good. The subject matter is treated from the point of view of the mechanism of normal and disturbed hematopoiesis, rather than the systematic consideration of disease entities. One hundred and six short clinical abstracts are given, illustrating types of blood abnormalities encountered in practice. A consideration of the Rh factor (and erythroblastosis) was intentionally omitted by the author to simplify the discussion of fundamental principles. The book is an ideal introduction to the subject and should serve to present hematology as a dynamic, rather than a purely morphologic, study.

Astrophysique. Le sang: Structure des hématies; la molécule d'hémoglobin, molécules de folliculine, de lutéine et de testostérone; coagulation du sang; maladies de la nutrition. Par le Docteur G. Froin. Paper. Price, 240 francs. Pp. 228, with illustrations. Girardot et C^ie^, 27, Quai des Grands-Augustins, Paris, 6^e^, 1946.

The most remarkable feature of this book is that the date is 1946 instead of 1346. It sets the clock back at least six centuries, possibly more. In a series of most curious diagrams, there is a startling combination of chemical formulas with the names of the different planets and references to the north and south poles. The application of astrophysics to the chemical constitution of the blood, sex hormones and nutritional maladies is not new, having been treated by the Chaldean metaphysicians, but the present treatise brings it up to date. The book makes a valuable contribution to modern medical curiosities.

A Memoir to the Academy of Sciences at Paris on a New Use of Sulphuric Ether. By W. T. G. Morton. Presented by M. Arago in the Autumn of 1847. With a foreword by John F. Fulton. Publication No. 14, Historical Library, Yale Medical Library. Paper. Price, $1.50. Pp. 24. Henry Schuman, 20 East 70th St., New York 21, 1946.

The Centennial of Surgical Anesthesia: An Annotated Catalogue of Books and Pamphlets Bearing on the Early History of Surgical Anesthesia Exhibited at the Yale Medical Library, October 1946. Compiled by John F. Fulton, M.D., and Madeline E. Stanton, A.B. Paper. Price, $4. Pp. 102, with 9 illustrations. Henry Schuman, 20 East 70th St., New York 21, 1946.

With an introduction by Dr. John F. Fulton, the publisher makes available a letter sent by W. T. G. Morton to the Academy of Sciences at Paris. The letter gives the background of the discovery and states clearly the evidence on which are based his claims in relation to those of Wells and Jackson.

Simultaneously, the same publisher makes available an annotated catalogue of books and pamphlets bearing on the early history of surgical anesthesia. Any physician interested in the background of what is perhaps the second greatest discovery ever made in medical science will wish to have a copy of this excellent historical contribution.

Dentistry: An Agency of Health Service. By Malcolm Wallace Carr, D.D.S., Director of Oral Surgery and Visiting Oral Surgeon, Metropolitan Hospital, New York. Studies of The New York Academy of Medicine, Committee on Medicine and the Changing Order. Cloth. Price, $1.50. Pp. 219. The Commonwealth Fund, Division of Publications, 41 E. 57th St., New York 22; Oxford University Press, Amen House, Warwick Sq., London, E. C. 4, 1946.

In addition to Dr. Carr nineteen distinguished contributors nationally known in fields of dental education, research, clinical practice and public health, prepared this volume.

The book itself is developed in six parts—History, Education, Dental Practice, Research, Dental Socio-Economics and part six, the summary and conclusions.

Through the book the philosophy that dentistry in all its parts is and should be autonomous and not under the control of the medical profession is warmly supported.

Dentistry as an organized profession is one hundred and six years old. During this period dentistry has developed from a highly technical craft to a full-fledged profession engaged in an effort to maintain health in the mouth and the body as a whole. This book traces some of the steps taken during the century to bring dentistry to its present position as "a part of the great pattern of public health care."

In part three, Dental Practice, the problems of Dentistry in Industry, Public Health Dentistry, Dental Practice in Rural Areas and Dentistry for Negroes are discussed.

The chapter on Dentistry for Negroes deals frankly with the problem of both dental service for the Negro and also the many difficulties of the Negro dentist. Every fair-minded professional man could agree with the statement made at the close of the chapter that "the new perspective of dentistry should include the integration of all qualified and ethical dental practitioners into organized dentistry, regardless of race or religion."

The importance of research in advancing the knowledge of dental caries and the periodontal affections which "have long been known as diseases characterized by high attack rates with no effective available method of mass control" is very properly stressed. It is through research in these areas that dentistry may be able to make its greatest contribution to the public "as an agency of health service."

While it is to be regretted that a stronger case for dentistry as a health service could not have been presented, there is no doubt that "this monograph will be of value to the dentist, the the physician, the health worker and the lay person who desire a total view of the present status of this profession and its place in a broad health service."

A Practical Handbook of Midwifery and Gynæcology for Students and Practitioners. By W. F. T. Haultain, O.B.E., M.C., B.A., Obstetrician and Gynæcologist, Royal Infirmary, Edinburgh, and Clifford Kennedy, M.B., Ch.B., F.R.C.S., Assistant Obstetrician and Gynæcologist, Royal Infirmary, Edinburgh. Third edition. Cloth. Price, $6. Pp. 388, with 47 illustrations. William Wood and Company, Mt. Royal & Guilford Aves., Baltimore 2, 1946.

This is a small book which presents chiefly in outline form the essentials of obstetrics and gynecology. In the United States such reference books for students are no longer popular, but apparently in Great Britain they are. Since there was a ten year interval between the second and the present edition, due to the war, a considerable part of the book was rewritten and a few new chapters were added. The subjects are well presented and the advice given in regard to treatment is conservative and proper. There are only forty-seven illustrations in the entire book and in the recent edition many of them should be replaced by more important ones. In a practical handbook of limited size attempting to cover two important specialties the following illustrations are irrelevant; the development of the ovum (highly diagrammatic), malacosteon pelvis, Naegele's pelvis, Roberts' pelvis and five illustrations of instruments used for destroying a baby. It is also questionable whether gynecologic operations should be described and illustrated in a small handbook. Two illustrations show an operation for expanding the vaginal outlet. This operation is a rarity. In the section on artificial respiration the authors fail to mention the tracheal catheter, which is one of the simplest and most effective means of initiating respiration in the newborn. The authors consider the axis-traction forceps, particularly the Milne-Murray type, to be the perfect instrument. In the United States few obstetricians use an axis-traction forceps even in difficult cases. In the treatment of puerperal sepsis there is no mention of penicillin, presumably because this section of the book was written before the introduction of the drug. However, penicillin is mentioned in the treatment of gonorrhea. Treatment is not outlined for syphilis, although the pathology and diagnosis of this disease are described.

Aside from these minor criticisms the book should prove most helpful to students and practitioners who prefer to study subjects in outline form. The book is easy to read, and the type is clear.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

ANESTHETIC DEATHS

To the Editor:—What is the number of deaths which occur annually during general anesthesia? What is the number of deaths which occur annually during general anesthesia for tonsillectomy? What is the number of deaths under spinal anesthesia? John S. Mikell, M.D., Tucson, Ariz.

Answer.—Definite answers to questions of this type are impossible (Safety of Anesthetics, Queries and Minor Notes, The Journal, Dec. 21, 1946, p. 1045). A recent paper by Bishop (Operating Room Deaths, *Anesthesiology* 7:651 [Nov.] 1946) is pertinent. This paper, with the references accompanying it, together with the remarks on Morbidity in Maxson's textbook (Spinal Anesthesia, Philadelphia, J. B. Lippincott, 1938, p. 242) offer some statistical information and pertinent comment. The figures tabulated by Bishop from the U. S. Bureau of Census (542 deaths during tonsillectomy and adenoidectomy among 6,250 deaths during operations occurring over a period of ten years) are difficult of evaluation because the total number of operations done during the ten years is not available. Neither is information available as to the details of anesthetic and operative procedure employed. Unquestionably the death rate during general anesthesia for tonsillectomy and during spinal anesthesia is relatively high. Whether a death in either instance is due to the anesthetic method per se or to inexpert management, both surgical and anesthetic, is often difficult to determine.

An unfortunate concept exists in the minds of many physicians that tonsillectomy under general anesthesia is a minor procedure demanding only a minimum of professional skill and experience either anesthetic or surgical. Much the same attitude exists in some localities regarding spinal anesthesia. Surgeons may administer a spinal anesthetic themselves, or permit their assistant to do so, and then operate on the patient with little consideration for the technic of administering the agent or for the supervision of the patient's condition during the effect of the drug. The experienced anesthetist, on the other hand, looks on these two procedures as technically exacting, requiring the maximum of skill and experience to make them safe.

HYPERHIDROSIS OF THE FACE

To the Editor:—A man aged 29 complains of either increased sweating on the right side of the face and head or decreased sweating on the left side (the second possibility seems more likely). Sweating elsewhere on the body is normal, although it is excessive in hot weather. Signs of Horner's syndrome are absent including ptosis of the lid, flushing and inequality of the pupils. Physical and neurologic examination are negative. Please discuss the etiology of this condition. M.D., Ohio.

Answer.—Various possibilities exist to account for this man's complaints. Hypersensitivity to various articles of food, such as chocolate, or other agents, such as inhalants, may be responsible. Hypersensitivity to histamine as in the Horton syndrome may be considered. In this syndrome headache may be present with or without flushing, tearing and sweating. The symptoms and signs are usually present only on one side. Various psychiatric conditions may be present, such as anxiety states. On the other hand, an organic disease of the upper thoracic cord may be present, such as syringomyelia or a tumor of the cord. These affect the cells of origin for preganglionic fibers supplying the sweat glands of the face. The patient should be given neuropsychiatric intensive study.

EXFOLIATIVE DERMATITIS AFTER CHRYSOTHERAPY

To the Editor:—Please discuss treatment of a patient with extensive exfoliative dermatitis of six months' duration following gold salt therapy for rheumatoid arthritis. Nicotinic acid was tried but was discontinued because of uncomfortable reactions. Alan A. Bassett, M.D., Little Current, Ont.

Answer.—In cases in which the exfoliative dermatitis following the use of gold salts has persisted four or more months, treatment should include measures recommended for exfoliative dermatitis in general as outlined by modern textbooks on dermatology (for example, Ormsby, O. S., and Montgomery, Hamilton: Diseases of the Skin, ed. 6, Philadelphia, Lea & Febiger, 1943, pp. 198-211). At this late date it is not likely that the use of BAL (British Anti-Lewisite) or any other metallic antidote will have much effect.

Symptomatic treatment will need to be carried out for a long time. The following measures are regarded as useful:

1. A soothing bath should be taken once or twice daily. The patient should not remain in the bath long enough to permit the skin to become soggy or macerated. Directions for a soothing bath follows:

Cook 2 cups of bulk oatmeal in 1 quart of water for thirty to forty-five minutes in a double boiler. Allow to cool for fifteen minutes, then add ½ cup of baking soda. Pour the entire mixture into a gauze bag and tie shut. Place in a bathtub one half to three fourths full of water at about 90 to 96 F. The patient may stay in the tub a half to two hours, expressing the oatmeal mash through the gauze and applying it over the body. Wash off the mash thoroughly before leaving the tub. Dry by patting, not by rubbing.

2. A mild emollient like olive oil or olive oil in lime water may be applied every one or two hours.

3. As the process becomes less acute one should apply a mild ointment with a heavy base such as zinc oxide and 3 per cent icthammol. Measures 1 and 2 should be continued also.

Thereafter time is the main factor. Healing may take weeks or months. The residual pigmentation may persist for months or permanently.

INCIDENCE OF POSITIVE SEROLOGIC TESTS FOR SYPHILIS

To the Editor:—What is the incidence of positive Wassermann tests as found in private physicians' offices, where routine blood Wassermann or Kahn tests are taken? What is the present day conception as to whether patients with positive blood reactions should be treated? Should treatment be administered to patients with positive Kahn tests without clinical symptoms if they are over 40, 50 or 60 years of age? C. Raymond Arp, M.D., Atlanta, Ga.

Answer.—The incidence of positive serologic tests for syphilis found in the private practice of medicine will vary enormously, depending on a variety of factors. Some of these are the geographic location of the physician (the incidence of syphilis is highest in the Southern and Southeastern states, lowest in the Northern and Northwestern states), the character of the physician's clientele (the incidence of syphilis is highest in patients in the lower socioeconomic levels, especially Negroes) and the special character of the physician's practice (for example, a dermatologist or a urologist might confidently expect the accidental discovery of greater numbers of patients with syphilis than an orthopedist).

The treatment of patients of any age discovered routinely to have positive serologic tests for syphilis depends on a large number of factors, all of which are discussed in such modern textbooks as Modern Clinical Syphilology by Stokes, Ingraham and Beerman (ed. 3, Philadelphia and London, W. B. Saunders Company, 1944) or The Modern Treatment of Syphilis by Joseph Earle Moore (ed. 2, 3d printing, Springfield, Illinois & Baltimore, Charles C Thomas).

CESAREAN SECTION AND REPAIR OF VENTRAL HERNIA

To the Editor:—A secundipara has now been pregnant four months. Her first pregnancy was eighteen years ago. Since then she has had a perineal repair and suspension of the uterus. After the suprapubic operation she developed a large ventral hernia. Is a cesarean section indicated with repair of the hernia at the same time or should the patient be allowed to go into labor and the hernia repaired at a later date? Lowell G. Hunter, M.D., Milan, Ind.

Answer.—It is not sound obstetric judgment to perform a cesarean section in order to carry out other surgical procedures at the time of delivery. Therefore it is not proper to perform a cesarean section simply because it is desired to perform a sterilization, remove a so-called chronic appendix or, as in the case described in the query, repair a postoperative hernia. There are several reasons for this. First, the risk of death following cesarean section is distinctly higher than it is for vaginal delivery even when the operation is an elective one. Second, the additional operation may increase the hazards of cesarean section because of the increased likelihood of infection. Third, in the case of an extensive postoperative hernia the additional length of the trauma of operation and the prolonged time of anesthesia undoubtedly will increase the risk of the laparotomy. This patient should be permitted to deliver from below and, because of the previous perineal repair and the eighteen year interval, an episiotomy should be done. The ventral hernia may be repaired after the baby is a week old, but it would be preferable to postpone this operation for a few mon

VISUALIZATION OF GALLBLADDER

To the Editor:—A woman at one time had symptoms of mild subacute cholecystitis, chronic arthritis of the spine and high blood cholesterol (330 mg. per hundred cubic centimeters). She was given a low cholesterol diet for several weeks with resultant loss of a few pounds in weight. Recently after complete examination by another physician including gastrointestinal roentgenograms, a gallbladder visualization test and x-rays of the spine, she was told that her only trouble was chronic arthritis of the spine. It was further stated that she never had had any gallbladder disturbance because, if she had the diagnosis could be made only by an x-ray examination, which would always show such a condition if it ever had been present. I informed the patient that a person can have a definite gallbladder condition without the gallbladder visualization test showing any signs or defects of the gallbladder. Is this statement correct? Also is there very much difference in the diet of a person suffering from a subacute or chronic gallbladder condition from that of a patient with a high blood cholesterol? Sidney Scheinman, M.D., New York.

Answer.—The gallbladder visualization test serves to show whether the gallbladder ducts are patent and will admit the dye. In addition, the dye sometimes supplies a background against which stones that would otherwise be invisible may be seen. Dye will enter a diseased gallbladder. It frequently does so when stones are present and will do so as long as the ducts are not completely obstructed. Whether the concentration of the dye will be as great in diseased gallbladders is a matter of debate. There are, however, other factors that will influence concentration, including an obese abdominal wall that gives an apparent lack of concentration and deficient absorption of the dye. Considering all these things it is quite correct to say that gallbladder disease may exist in the presence of a negative Graham-Cole test. It should be added, however, that this does not happen often.

The statement that x-ray examination would always show such a condition if it ever had been present may be challenged. Work has been published to show that nonvisualizing gallbladders may later visualize well. In one series of published cases the dye was administered orally in all instances. In another series the dye was injected intravenously in all instances. By either technic it was found that positive tests (that is, nonvisualizing gallbladders) later became negative. This improvement was credited to medical management but, whatever the cause, the facts are clear.

The diet for hypercholesteremia is not essentially different from the diet used in gallbladder disease. As a matter of fact, gallbladder disease is one of common causes of hypercholesteremia. However, one should be sure that no other cause for hypercholesteremia exists.

REBOUND TENDERNESS AND ROVSING'S SIGN

To the Editor:—Please discuss the significance of "rebound tenderness" in abdominal disease and the physiologic basis for its production. Is this term synonymous with Rovsing's sign? M.D., Illinois.

Answer.—Rebound tenderness is an important diagnostic finding in the examination of the abdomen and always means involvement of the parietal peritoneum. Whereas tenderness on direct pressure is readily elicited in inflammatory lesions involving the abdominal viscera, the sudden release of the examining hand does not result in pain unless there is involvement of the parietal peritoneum. Unquestionably the physiologic mechanism for the production of pain is that in the presence of inflammatory involvement of the parietal peritoneum the sudden release of pressure will result in movement of the peritoneum and pain, similarly to that which occurs when pain results from movement of the diaphragm if the serosal covering of the diaphragm is inflamed.

Rebound tenderness is not synonymous with Rovsing's sign, which is pain referred to McBurney's point when pressure is exerted on the descending colon. This finding is not infrequently present in chronic appendicitis as well as in acute appendicitis. Presumably the increase in intracolonic pressure produced by compressing the descending colon and its transmission to the lumen of the appendix are responsible for the pain. Rebound tenderness was first described by Blumberg.

EFFECTS OF ANTIPYRETIC DRUGS ON MEASLES ERUPTION

To the Editor:—What is the effect of antipyretic drugs given during the prodromal and preeruptive stages of morbilli? Does the lowering of the temperature tend to prolong the period of eruption? Verna M. Pennington, R.N., Lennox, Calif.

Answer.—Antipyretic drugs administered during the preeruptive stage of measles ordinarily do not affect the duration of eruption. At one time it was reported by some clinicians that the administration of aminopyrine during the prodromal stage of measles modified or shortened the duration of the rash.

VAGINAL DOUCHES

To the Editor:—Included in the answer to a query in *The Journal* Aug. 10, 1946, page 1254 was the statement "for those who insist, douches should be used not oftener than once or twice a week at most." I question the value of douches quite aside from the fact that it requires a lot of work for a busy, tired, half-sick woman to prepare, take, and clean up after a douche. However, specialists in gynecology still prescribe vinegar douches daily for a month or six weeks at a time as an adjunct to the treatment of trichomonas vaginitis. Please discuss the advantages and disadvantages of douches. M.D., Florida.

Answer.—Vaginal douches are a mechanical means of removing discharge and also of reducing odor associated with excessive vaginal discharge. There is little documentary proof that douches per se are especially therapeutic. The contention has existed but has not been completely proved that the vaginal acidity can be reestablished by the use of vinegar (acetic acid), lactic acid and other acids in the daily douche. A disadvantage to douches is that they remove the discharge and secretion and may interfere with the material for satisfactory microscopic examination unless there has been a lapse of a few days since the last irrigation. Some prefer to use a douche solely for cleansing purpose shortly after completion of the menstrual period, and also late in the puerperium to remove lochial discharge. Douches are unreliable for the production of pelvic hyperthermia. Where materials are deposited in the vagina in association with treatment the douche may be employed occasionally to make sure that there is not an excessive accumulation of the therapeutic agents and its vehicle. Many gynecologists avoid the use of douches except for cleansing purposes and astringent values in the treatment of cervicitis. Occasionally a deodorizing agent may be employed to reduce the odor of advanced cervical carcinoma.

PROPHYLACTIC DIGITALIZATION

To the Editor:—Is there any evidence that the administration of digitalis before operation to a compensated heart patient is valuable in preventing the onset of congestive heart failure? The patient in question has never had congestive failure. Does full digitalization of a compensated heart have any value in preventing the onset of heart failure? Harry R. Deane, M.D., Bay Pines, Fla.

Answer.—The term "heart patient" is rather indefinite. The query could be answered more intelligently if the type of heart disease or disorder was known. Generally speaking, the principal indication for the use of digitalis is congestive heart failure. It is surprising how seldom congestive heart failure comes on as the result of a well conducted surgical procedure. Peripheral vascular collapse or the onset of an abnormal rhythm occurs much more commonly in the wake of a surgical operation, and neither of these is benefited by digitalis. Indeed, digitalis is usually contraindicated in such emergencies. Latterly, some evidence has been produced to indicate that digitalis increases the tendency of the blood to clot within the vessels. This is a distinct disadvantage following surgical procedures. There is lack of unanimity of opinion among cardiologists concerning the ability of digitalis to prevent the onset of congestive failure in the compensated heart but, considering the possible disadvantages, it would seem unwise to administer it without a direct indication.

There is a group of "heart patients" in which the prophylactic use of digitalis might be countenanced. These are patients with chronic auricular fibrillation. The heart rate is usually greatly increased in auricular fibrillation following surgical procedures and digitalis control might be of advantage in these cases.

TREATMENT OF EPIDEMIC KERATOCONJUNCTIVITIS

To the Editor:—Please discuss the use of human globulin in the treatment of virus conjunctivitis and superficial punctate keratitis. Harold L. Snow, M.D., San Pedro, Calif.

Answer.—Human plasma has been used in the treatment of epidemic keratoconjunctivitis, which is undoubtedly a virus disease. This disease is associated with a superficial keratitis. The plasma has little or no effect on the superficial keratitis once it has developed, but has a profound beneficial effect on the disease if given early. It is doubtful that human globulin or human plasma would be of much benefit after the disease of the cornea or conjunctiva is well established, since the virus is undoubtedly fixed in the cells and may not be reached by the antiviral bodies. Similar experience has been found with use of human globulin with other types of viral diseases.

References:

Braley, A. E., and Sanders, Murray: Treatment of Epidemic Keratoconjunctivitis, The Journal, March 27, 1943, p. 999.

Braley, A. E.: Epidemic Keratoconjunctivitis, Arch. Ophth. 33: 47 (Jan.) 1945.

The Journal of the
American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 133, No. 8
Chicago, Illinois
February 22, 1947

Copyright, 1947, by American Medical Association

PRESENT TRENDS IN THE PRACTICE OF NEUROLOGY

GEORGE WILSON, M.D.
and
CHARLES RUPP Jr., M.D.
Philadelphia

From many quarters there arise diverse voices intimating that in this day and time the clinical neurologist is destined to become merely an anachronism, whose former functions might now better be relegated to other colleagues, especially the psychiatrist and the neurosurgeon. The internist proclaims that to him, rightfully, belong the infections and deficiency, toxic and vascular disorders of the nervous system; the syphilologist requisitions the cases of syphilis of the central nervous system; the pediatrician deems only himself competent to manage the neurologic disorders of childhood, and the allergist disputes for the paroxysmal dysfunctions such as migraine, Ménière's syndrome and cephalalgia. The orthopedist treats both spastic and flaccid paralyses and the neurosurgeon seeks the traumatisms and neoplasms of the nervous system, while the psychiatrists consider only themselves competent to manage the case in which there is the slightest psychogenic component. For the clinical neurologist there remain only the leavings of a few heredodegenerations, an occasional rare disorder of occult causation, poor in prognosis and unamenable to therapy, and possibly a minor role as the penultimate consultant a few hours in advance of the pathologist, at the bedside of a moribund patient whose symptoms still remain a baffling mystery.

Such are the trends of the times, and as auguries of the future one hears of plans in one medical school to reorganize the department of neurology in some obscure and insignificant attic of the department of medicine, in another to reduce the time allotted to clinical neurology to a few didactic lectures in the third year, eliminating entirely any bedside instruction, while more and more hours are devoted to psychiatry, even at the expense of reducing the time formerly devoted to anatomy, chemistry, pathology and bacteriology.

Chief among the Cassandras anticipating the early demise of the clinical neurologist is his colleague, the so-called "pure" psychiatrist, who, though intoxicated with grandiose dreams about curing all the political, marital, martial, racial and economic ills of a sorely troubled world by the application of psychiatric principles, is still unable to maintain a tolerable harmony amidst his own ranks. So preoccupied have some psychiatrists become with the broader sociologic, political and even mystic attributes of their specialty that they would divorce themselves entirely from any allegiance to medicine. We have heard one eminent psychiatrist state, in all seriousness, that he considered it a grievous detriment that the psychiatrist is compelled to study medicine at all, since it prejudices in favor of the structural and "organic." In his opinion, a far better training might be oriented in the disciplines of sociology, anthropology, economics, history, psychology and psychoanalysis. Another equally eminent psychiatrist of our acquaintance boasts that he never performs a physical examination lest the patient gain the misapprehension that something amiss with his body might be responsible for his symptoms. Evidence that these opinions are not isolated idiosyncrasies is to be found in the agitation on the part of many psychiatrists that it is unfair to demand even the most elementary knowledge of clinical neurology and its related basic sciences of their younger disciples, who are seeking certification as specialists; they see nothing incongruous in a psychiatrist so neurologically naive that he considers the red nucleus some mysterious appendage of the U. S. S. R. How ridiculous all this must seem when approximately 51 per cent of the patients confined in mental hospitals in the United States suffer with a form of psychosis directly attributable to disease of the nervous system or some other organ of the body![1]

We do not hesitate to confess that in our personal experience as practicing neurologists, who, if we may be permitted to say so, have had considerable training in psychiatry, we frequently find it difficult to assess whether a patient's symptoms represent manifestations of a structural disease of the nervous syestem or whether they should be regarded as being emotionally or psychogenically conditioned, and we are compelled to utilize to the utmost as much knowledge of internal medicine, neurology, and psychiatry as we possess. In a previous paper[2] we have called attention to the fact that diverse diseases of the central nervous system such as chronic encephalitis with parkinsonism, multiple sclerosis, pseudosclerosis, dystonia musculorum deformans and tumor of the brain, may first become manifest in a setting strongly colored by emotional and psychic turmoil, and the correct diagnosis is often extremely

---

From the Department of Neurology, Philadelphia General Hospital.

Read before the joint meeting of the Section on Nervous and Mental Diseases and the Section on Ophthalmology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 5, 1946.

[1] Patients in Mental Institutions, 1943, United States Department of Commerce, Bureau of the Census, 1946, p. 22.

[2] Wilson, G.; Rupp, C., and Bartle, H., Jr.: Emotional Factors in Organic Disease of the Central Nervous System, Am. J. Psychiat. 99: 788 (May) 1943.

difficult. More recently, we have reported[3] a series of cases of tumors in the posterior fossa of the brain in which mental symptoms were often the presenting complaint. Daily in our practice we encounter cases in which neurologic, psychiatric and internal medicine components are inseparably intermingled, cases which cannot be adequately managed by a practitioner whose orientation is exclusively psychologic. We cite briefly 3 cases:

REPORT OF CASES

CASE 1.—A white married housewife, aged 45, complained of fatigue and progressive loss of appetite of one month's duration. A week later a dull aching midabdominal pain developed, accompanied by spells of hiccuping and vomiting. Her bowels, formerly always regular, became constipated, and she lost 15 pounds (6.8 Kg.) in weight. Physical and neurologic examination revealed nothing of significance aside from evidence of loss of weight and a slight diffuse enlargement of the thyroid gland. Examination of the blood revealed hypochromic anemia, with 12.2 Gm. of hemoglobin per hundred cubic centimeters and a red blood cell count of 3,240,000. Results of other laboratory studies including estimations of sugar and urea in the blood, tests of the blood serum, urinalysis and determination of the basal metabolic rate, were within normal limits. Complete roentgenologic examination of the gastrointestinal tract revealed only hyperperistalsis. She was seen by two internists, as well as by her family physician, all of whom agreed that there was no organic basis for her symptoms, which were considered to be psychogenic in origin since she had always been a worrisome, perfectionistic type of person, and recently had been disturbed by her husband's interest in a younger woman. She was referred to a psychiatrist for psychotherapy. In spite of this, her vomiting and hiccuping continued, and intravenous infusions became necessary. Four weeks after the onset of her symptoms, while in the midst of a stormy visit from her husband, there suddenly developed a left-sided jacksonian seizure, which was followed by a generalized grand mal attack. Similar jacksonian attacks, alternately involving both sides, and grand mal convulsions continued at three to five minute intervals, persisting in spite of all therapy. In the intervals between attacks the neurologic examination disclosed no abnormality and examination of the fundi revealed no choking. The roentgenogram of the skull was likewise normal. Chemical studies of the blood after the onset of the convulsions revealed 18.4 mg. of calcium per hundred cubic centimeters of blood. The patient alternated between deep coma and continuous convulsions for six days. The temperature gradually rose to 106 F. Three subsequent determinations of calcium in the blood revealed levels of 21.3, 24 and 26 mg. per hundred cubic centimeters. There was 3 mg. of phosphorus per hundred cubic centimeters of blood, and there were 4.1 units of phosphatase activity. Roentgenograms of the spine and of all long bones revealed only a slight general decalcification, which was not considered clinically significant. Operation was considered inadvisable by the consulting surgeon on account of the patient's poor condition. At necropsy, the chief finding of interest was a cystic adenoma of the parathyroid gland.

CASE 2.—A white girl, a college student aged 17, was admitted in a state of agitation, complaining of "terrible nerves." Three months before she had made homosexual advances to a classmate, but was spurned. Thereafter she became dissatisfied with her classes and fellow students, took a dislike to her food, began vomiting and felt tired. Two weeks before admission she caught a "very bad cold," but after a week recovered. She returned to her classes but felt too weak to walk. She was unable to sleep, became agitated, had difficulty in breathing and complained of pains in the stomach, the nose and sinuses and the lower part of the chest. At the time of physical examination, the patient was agitated, grunting and moaning with each respiratory effort. She claimed that she could not lie down to cooperate with the making of the examination because of inability to breathe, but cooperated well when a woman resident physician made the examination. Physical examination revealed nothing significant aside from labored respirations of 30 per minute and a pulse rate of 130. Although she claimed that she could not walk, neurologic examination revealed nothing significant. A diagnosis of hysteria was considered. In an attempt to quiet her agitations and to obtain rapport, the patient was given 0.8 Gm. of sodium amytal intravenously and questioned regarding her conflicts. After twenty minutes of the narcoanalytic interview she became increasingly resistive, agitated and assaultive. An attempt was made to give more sodium amytal. The patient suddenly ceased breathing, and artificial respiration was of no avail. At necropsy, the only finding of significance was a large firm yellow tumor, weighing 1,530 Gm., which filled the entire mediastinum, extending up into the neck and compressing the heart, the lungs and the aorta. Histologic examination revealed the tumor to be a thymoma.

CASE 3.—A white stenographer, aged 20, was operated on for acute appendicitis. Her convalescence was uneventful until the fourth postoperative day, when she suddenly became mute, negativistic and resistive and showed cataleptic rigidity. From information obtained from her family, it seemed reasonable to assume that her personality make-up was fairly stable, and she had made an excellent previous adjustment to her school work and occupation. It was noted that for about a week previous to her operation she had vomited frequently and eaten little. Since the operation she had had nothing by mouth except water. A chemical examination of the blood was suggested, and it was found that there was only 40 mg. of sugar per hundred cubic centimeters of blood. Her symptoms promptly disappeared after the intravenous administration of 50 cc. of a 50 per cent solution of dextrose, and she has remained well over a period of five years since, making a satisfactory adjustment.

Undoubtedly some critics will insist that cases similar to the foregoing are the proper province of the psychosomaticist. Originally motivated by the intention of stressing the interdependence of body and psyche, it appears that, save for a few isolated exceptions, most of the psychosomaticists have become too preoccupied with the aspects of the psyche, to the neglect of the soma. The direction of the bias is indicated by the fact that most training programs in psychosomatic medicine insist on a personal psychoanalysis. To neurologists, much of the psychosomatic literature with its attempts to blame many, if not all, the diseases which afflict humanity on too rigid personalities, beset by frustrations and emotional conflicts, falls into the fallacy of "post hoc, propter hoc" illogicality and is unconvincing. Perhaps the harvest might be more fruitful if more time were expended on a study of the effect of the soma on the psyche rather than the converse. We have in mind further investigations, such as those of Saphir[4] on the relationship of hypochloremia to psychoneurotic states, of Miller[5] on the effects of lowering the intake of salt in relation to insomnia and tension, investigations of such problems as suggested by Benjamin and Hoyt,[6] who found both psychoneurotic and parkinsonian-like syndromes as residual disabilities of hepatic damage suffered incidental to postvaccinal hepatitis, and studies such as those of Karlan and Cohn[7] on the relationship of hypoglycemia to fatigue. Further evidence of the importance of somatic factors in mental disorders are revealed by the studies of Riggs[8] from the Neuropathologic Laboratory of the

---

[3] Wilson, G., and Rupp, C.: Mental Symptoms Associated with Extramedullary Posterior Fossa Tumors, paper read before the meeting of the American Neurological Association, June 28, 1946.

[4] Saphir, W.: Chronic Hypochloremia Simulating Psychoneurosis, J. A. M. A. **129**: 410 (Oct. 13) 1945.

[5] Miller, M. M.: Low Sodium Chloride Intake in the Treatment of Insomnia and Tension States, J. A. M. A. **129**: 262 (Sept. 22) 1945.

[6] Benjamin, J. E., and Hoyt, R. C.: Disability Following Postvaccinal (Yellow Fever) Hepatitis, J. A. M. A. **128**: 319 (June 2) 1945.

[7] Karlan, S. C., and Cohn, C.: Hypoglycemia Fatigue, J. A. M. A. **130**: 553 (March 2) 1946.

[8] Riggs, H. E.: Personal communications to the authors.

Philadelphia General Hospital. In 121 cases in which the patients died during an acute psychotic episode, the following visceral disease was noted:

Cardiovascular disease		61 cases
Cardiovascular renal	27	
Syphilitic	15	
Peripheral circulatory failure	12	
Rheumatic endocarditis	7	
Metabolic disorders		39 cases
Chronic alcoholism	13	
Nutritional deficiencies	10	
Plumbism	2	
Hyperthyroidism	2	
Fatty degeneration of the liver (cause unknown)	12	
Cerebral neoplasm and trauma		12 cases
Anemias and infections		9 cases

One hundred and twelve cases (93 per cent) in addition presented congenital anomalies of the vascular tree, consisting of anomalies of the circle of Willis and hypoplasia of the heart and the aorta, either associated or singly. In the presence of such congenitally inadequate circulation, one may speculate that even slight biochemical disturbances occasioned by mild somatic disease might produce sufficient anoxia to initiate disturbances of cerebral metabolism which could become clinically manifest as mental disorders.

Regardless of whether the cause of the so-called functional psychoses ultimately proves to be neuronogenically or psychogenically determined, the psychiatrist can no more hope to comprehend the problems of his present day patients, if he is devoid of any knowledge of clinical neurology than can the neurologist attempt to treat even the simplest case of paralysis without some knowledge of the structure and functions of the personality. If the neurologist can acquire a respectable mastery of the fundamentals of psychiatry, is it beyond the capability of the psychiatrist to possess an equivalent knowledge of the basic anatomy, physiology, pathology and clinical disturbances of the nervous system?

While both neurology and psychiatry owe much to, and must ever rest (as must every specialty) on a firm grounding of internal medicine, it is deplorable to contemplate that the management of disorders of the nervous system should be relegated to the internist or his colleagues in the subspecialties of allergy, syphilology and pediatrics. It is to be remembered that the reactions of the nervous system which manifest themselves as symptoms are rather limited and are common to many diverse etiologic agents. It is unfair to place the responsibility for determining whether a convulsion is the expression of an underlying tumor, trauma, infection, vascular disturbance, degeneration, metabolic disorder or psychic conflict, on one whose orientation is mainly extraneural and whose knowledge of the structure, function and pathology of the nervous system is represented, with rare exceptions, by hazy memories retained for the most part from the first two years of medical instruction. Nor is the neurosurgeon inevitably predestined to be chief in the management of the neurologic cases. While in some cases his aid is indispensable, it is to be remembered that in a large general neurologic service, such as that at the Philadelphia General Hospital, where both neoplastic and traumatic cases are assigned, less than 2 per cent of all patients with neurologic disease require treatment by neurosurgical methods. In most instances, the training of the neurosurgeon has been mainly along surgical lines, the technical intricacies of his art consume much of his time and, with few exceptions, the neurosurgeon does not pretend to proficiency in neurologic diagnosis.

In the warfare against the ravages of disease of the nervous system, there is no place for internecine strife and bickering as to what is purely neurologic or purely psychiatric or purely neurosurgical. There can be no arbitrary division of the disorders of the nervous system into isolated compartments, each managed by an isolated specialist. Future progress requires the coordinated team work of the clinical neurologist, the psychiatrist, the internist and the neurosurgeon, mutually strengthened by the assistance of the neuroanatomist, the neurophysiologist, the neuropathologist, the biochemist and workers in the other basic medical sciences. Without a thorough foundation in the essential principles of neurology, anatomy, physiology and internal medicine, psychiatry becomes as sounding brass and a tinkling cymbal, full of sound and fury, signifying nothing. Let the psychiatrist postpone his gratuitous advice regarding the cures of the ills of the body politic until such time as he has more effectively mastered the causes and treatment of the mental ills of the individual patient. Let him abandon the hustings and return once more to the clinic and the laboratory. Those who consider psychiatry a discipline apart might well heed the warnings of S. Weir Mitchell,[9] which, although uttered over fifty years ago at the fiftieth meeting of what is now the American Psychiatric Association, are still pertinent:

> . . . that which is impairing the usefulness of the lesser specialties in medicine has been more grossly enfeebling your value and retarding your development. I mean the tendency to isolation from the mass of the active profession . . . you were the first of the specialists, and you have never come back into line . . . you soon began to live apart, and you still do so. . . . You live out of range of critical shot. . . . Nor can I cease to lament the day when the treatment of the insane passed too completely out of the hands of the profession at large, and into those of a group of physicians who constitute almost a sect apart from our vitalized existence.

Likewise pertinent are the words of Bernard Sachs,[10] uttered in 1897 before the same society:

> Far from being foes or even antagonists, we are struggling for a common cause, and should be united against the common enemy, . . . the diseases of the nervous system. Do what we will, we cannot separate diseases of the mind from the organic diseases of the brain and spinal cord. No one can be thoroughly devoted to a study of the latter class without at the same time taking a deep interest in psychiatry. I have no doubt that others like myself would never have entered the ranks of the neurologists if they had not been impelled to the study of nervous affections by a special fondness for the analysis of mental conditions. . . . Mental diseases should be studied not only with reference to the needs of society . . . but the relations of insanity to the entire organism, its relation to other acute and chronic nervous diseases.

In the years elapsing since Mitchell and Sachs spoke so wisely, the psychiatrist has emerged from the isolation of the asylum and now frequents the general wards and consulting room, but many of the evils of immurement linger. The isolation in viewpoint persists, and too often the psychiatrist considers himself apart from his fellow practitioners. Persistence in this attitude can lead only to cultism. Further progress in solving the still vast problems of causation and therapy of mental disorders will be delayed until the psychiatrist becomes truly a physician, well versed in all disciplines relevant to the structure and functioning, in health and disease, of the most complex organ of the body, the nervous system.

133 South 36th Street (4).

---

[9] Mitchell, S. W.: Address before the fiftieth annual meeting of the American Medico-Psychological Association, J. Nerv. & Ment. Dis. **21:** 413 (July) 1894.

[10] Sachs, B.: Advances in Neurology and Their Relations to Psychiatry, Am. J. Insanity **54:** 1 (July) 1897.

ABSTRACT OF DISCUSSION

Dr. J. M. Nielsen, Los Angeles: I want to point out that clinical neurology is only staggering a little; it is not going down. Let us see what has happened in psychiatry in the last few decades. Every advance in psychiatry that has been made in the last few decades has been made on the basis that the mind resides in the brain. Insulin shock replaced the former psychotherapy of dementia praecox. Metrazol and then electric shock came along and have even surpassed insulin shock in therapeutic results. These methods of shock therapy do not shock the patient into a willingness to get well; they make him well in spite of himself by correcting to a large extent the abnormal condition that exists in the brain. The brain is the organ of the mind. Every thought, every idea of any sort, every hallucination, every delusion has a neural basis. There cannot be a thought without its traveling over the neurons of the brain.

There are many things which we neurologists do not know. We do not have any idea or misconception that there is a certain focus in the brain in which a lesion will produce a psychoneurosis. We do not believe that that can ever happen. We believe that a psychoneurosis results from a poor use of normal structure. We do not want to pretend to know anything which we do not know, and all that we want to do is to extend gradually, perhaps slowly. But we believe that certainly within another half century psychiatry will be well understood on the basis of neurology.

With regard to the neurologic surgeon and clinical neurology, there is a certain temperamental difference between a surgeon and a clinical neurologist. A surgeon wants action, and he wants it in a hurry. He wants to remove that lesion and have the patient well. He is not much of a philosopher as a rule. The neurologist has the philosophic attitude of the psychiatrist and the technical leaning of a neurosurgeon, and that is where he comes in. He is willing to spend months, if necessary, in examining and reexamining the case and deciding whether surgical intervention is needed. I think that there will be a constant, good liaison between the neurosurgeon and the neurologist simply because they are necessary to each other.

Dr. John B. Doyle, Los Angeles: It is greatly to the credit of Dr. Wilson and Dr. Rupp that they have brought into the open discussion of a problem of such fundamental importance. Society at large and the medical profession in particular have for several generations been threatened by the development of a dichotomy between those interested in the total expression of the nervous system of man and lower animals and those interested solely in psychiatric norms and deviations. The problem has been complicated during the twentieth century by the evolution of neurosurgery and, to a lesser degree, by the changing purviews of the internist, the pediatrician, the syphilologist and the allergist. In my opinion the situation which confronts those of us who are interested in the nervous system as a whole, in the advancement of knowledge and in the elevation of standards of practice in neurology and psychiatry is not one which should put us on the defensive or lead to acrimonious generalizations or ultimatums. The logical approach to anything like a satisfactory resolution of the evils that have arisen, and the greater ones that hover in the future, is through a program of education of the people as a whole and of administrators of the medical services of the army, navy and public health, of hospitals and of medical schools. Such a campaign may at first glance appear grandiose and impractical. Yet it is the means by which the more vocal portion of our specialty has advanced itself to a point where it threatens the extinction of progress in neuroanatomy, neurophysiology, neuropathology and clinical neurology, the sciences from which psychiatry has derived its essential substance.

Dr. Walter F. Schaller, San Francisco: I practice neurology by choice, but psychiatry by necessity—not exactly financial necessity but the necessity of keeping busy because of the inclusion of clinical neurology in so many other specialties and the close relationship between neurology and psychiatry. It is apparent from the report of Dr. Rupp that the psychiatrist often lacks a sufficient foundation in neurology or has forgotten what he has learned about neurology. Assuming that the latter is true, perhaps the explanation is not too difficult because of the wide field that psychiatry is now attempting to cover. For example, I have had requests to examine patients who wished consultations for the following reasons: household dissensions, maladjustments in marriage, unrequited love, draft evasion, because they were dissatisfied pensioners and because they wished to evade the penalties of the law. I often advise these patients to consult their parents, their religious adviser, their lawyer or, as an alternative, to go to an analyst. Is it, then, any wonder that many psychiatrists cannot keep pace with scientific advances in neurology and psychiatry? I have looked up the definition of "neurology" in Webster and found that it is defined as "that branch of science which treats of the nervous system." Unless psychiatrists object to this definition, they must admit that their specialty is but a part of neurology. I will conclude by quoting a paragraph of Dr. Pearce Bailey's paper read before the American Neurological Association last week. It is so conservative and so nicely worded that I am sure that those of you who heard it will be pleased to hear it again. "I do not believe that the existing predominance of a psychological orientation constitutes a valid cause for alarm to clinical neurologists. After all, the psychological approach represents only a particular method or technic for the investigation of the disorganized nervous economy. It cannot presume to rise above the constellation of physiological and social forces of which it is a part, any more than water can be expected to rise above its source."

Dr. Roland P. Mackay, Chicago: Lest it be thought that this is merely a session of breast beating on the part of neurologists, I should like to emphasize two points. The neurologist himself is often to blame for the difficult situation in which he finds himself. Many neurologists have so divorced themselves from the knowledge of medicine and surgery in general that they are placed by their confreres in the class of partial physicians. Perhaps that condition arose from the fact that neurologists originally were closely associated with state hospitals and lived in an ivory tower, far from the practice of medicine. A good neurologist is one who knows general medicine, because the majority of symptoms which come under his purview have their origin in general medical conditions. If the neurologist wants to endear himself to the heart of the internist, he will have to know more about general medicine and so make his specialty applicable in the mind of the internist. My second point is that the neurologist's difficult situation is in no small part due to the referring physician, sometimes the ophthalmologist. Because of the unpretentious role of medical neurology and the brilliance of neurosurgery since Horsley, because the sunlight of popular attention glitters on the silver scalpel in the surgeon's hands and because neurosurgery naturally deals with organic conditions, the average physician has come to identify organic neurology with neurosurgery and, contrariwise, to identify the neurologist with the functional or psychogenic disorders. It is not necessary to send every patient with a homonymous field defect to a neurosurgeon. Perhaps the majority of patients who have field defects should go to a medical neurologist rather than to a neurosurgeon. It is not necessary to send every patient who limps or has some motor difficulty to a neurosurgeon. In fact, the neurosurgeon, because of his diagnostic limitations and because his attention is directed primarily to surgical conditions, is not able to make a correct and thoroughgoing appraisal of such cases. The fault is the neurologist's in not keeping his mind open to the whole broad field of medicine, and, secondly, it is the fault of the referring physician, because he identifies organic conditions with surgery. Both of these mistakes can be rectified easily, and perhaps the future of neurology will be much brighter than the Cassandras think.

Dr. Henry R. Viets, Boston: I should agree that neurology is at a low ebb, but as I see the subject, the tide is turning and turning rapidly. Witness the extraordinary enthusiasm of the meeting last week in San Francisco of the American Neurological Association under Dr. Schaller, the establishment of a strong neurologic department in the University of California Medical School under Dr. Aring, and the fact that we are discussing this very problem here at the meeting of the American Medical Association. Neurology can be advanced only by neurologists. The minute a department in a medical school or even in a hospital is abandoned, as has unfortunately occurred in this country, neurology falls to a low level as far as the advancement of our knowledge of nervous diseases is concerned. In a medical school perhaps our primary duty is to train medical students, and we must realize that a sound training in neurology is essential for the practice of general medicine, which after all is what 85 per cent of our students are going to do. Osler used to say that 15 to 20 per cent of his diagnostic problems in consultations were neurologic in character, and 50 per cent of his early papers were written on neurologic subjects. He, like every outstanding internist, was a good neurologist, but the exceptions are many and the average internist or specialist in other fields of medicine cannot be a good neurologist. Only the neurologist can be a good neurologist, and only the neurologist will advance the knowledge of diseases of the nervous system.

EARLY RECOGNITION AND MANAGEMENT OF INTESTINAL STRANGULATION

EVERETT IDRIS EVANS, Ph.D., M.D.
and
I. A. BIGGER, M.D.
Department of Surgery, Medical College of Virginia
Richmond, Va.

Although improvements in therapy have resulted in a decided reduction in mortality in simple mechanical obstruction of the small bowel, the mortality in strangulation obstruction is still high. In a recent report by McKittrick and Sarris,[1] 59 per cent of the deaths in their patients with intestinal obstruction occurred in the strangulation group. In the hospitals of the Medical College of Virginia, strangulation of the small bowel has been responsible for more deaths in the years 1941 to 1946 than appendicitis with rupture and peritonitis.

Most authors agree that the most important factor influencing a favorable outcome in strangulation of the small bowel is early surgical intervention. A study of the patients seen by us during the past five years has impressed us with the likelihood that if close attention is paid to the clinical history and to the physical observations early and correct diagnosis of intestinal strangulation is usually possible. In this communication, therefore, we describe the clinical observations which we consider important in distinguishing between mechanical obstruction and strangulating obstruction of the small bowel.

THE DIFFERENTIATION OF SIMPLE VERSUS STRANGULATION OBSTRUCTION

In the following discussion we have assumed that the physician, after a careful history and physical examination, has concluded that of the abdominal disorders which might be responsible for the condition of the patient mechanical obstruction of the bowel is the most likely. *Briefly stated, the immediate question then is, "Does this patient have a simple or a strangulating obstruction?"*

In this review of our experience, we have excluded all cases of strangulation of the small bowel incident to external hernia; 2 cases of strangulation due to intussusception are excluded because the diagnosis was so obvious at the first examination.

SYMPTOMS

Pain.—*Pain is the commonest symptom in obstruction of the small bowel.* Although it is generally stated that in both types of obstruction the onset is sudden, we are impressed by the dramatic onset of pain in strangulating obstruction; it is likely to be sudden and severe, even violent. In this respect the patient with strangulation resembles those of other clinical states where the flow of blood to a part is suddenly obstructed (coronary occlusion or embolus to a main artery of any extremity). In simple obstruction the patient may recall that in the earliest hours there had been abrupt, periodic increase and cessation of the pain, but in strangulation the pain is generally continuous without intervals of complete freedom from pain.

Vomiting.—Practically all patients with mechanical obstruction of the small bowel vomit. However, in our series, we are impressed with the incidence of frequent, *repeated vomiting by the patients with strangulating obstruction.*

THE PHYSICAL EXAMINATION

General Physical Observations.—The patient with strangulating obstruction usually appears extremely ill, while the majority of patients with simple obstruction do not appear particularly ill except, perhaps, during periods of severe cramping pain or late in the disease.

Shock.—If the clinical signs of shock (blood pressure low or falling; rapid weak pulse; peripheral cyanosis; cold sweating extremities; patchy cyanosis of the chest or abdomen) appear in a patient with small bowel obstruction after only a few hours, the obstruction is almost certainly strangulating. Unfortunately, the clinical evidences of shock are usually not observed until the blood volume is reduced by at least 25 per cent.[2] Shock is seen too late in strangulation to be of help in differentiating it from other types of bowel obstruction.

THE SIGN OF "POSITION OF RELIEF"

We have observed that the patient with volvulus usually assumes a particular position in the bed, in which position they state they are freer of pain than in other positions. It is probable that this "position of relief" reduces traction on the mesentery, thus giving partial relief from the constant pain. We have therefore designated this position the "position of relief." As far as we are aware *this sign has not previously been* described in connection with the differentiation of strangulation, especially volvulus, from other forms of obstruction (see the accompanying illustration).

This "position of relief" has been seen only in obstruction due to strangulation of the bowel. It was noted in all but 2 of our patients in the strangulation group. Practically all patients with simple obstruction of the small bowel appear to be comfortable in the supine position and do not complain when they are moved from this position. Patients with strangulation obstruction generally lie in a "position of relief." This position may be on one or the other side. One patient (W. B.) experienced some relief only while sitting upright, inclining forward. If patients with a strangulation obstruction are moved from the "position of relief" they complain more severely of their abdominal

---

Read before the Section on Surgery, General and Abdominal, at the Ninety-Fifth Annual Session of the American Medical Association, July 4, 1946.

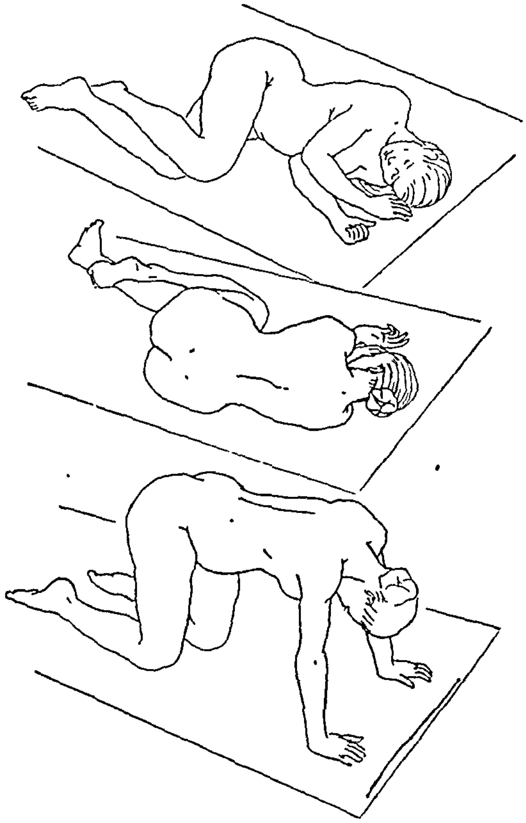
[1] McKittrick, L. S., and Sarris, S. P.: New England J. Med. **222**: 611, 1940.

[2] Evans, E. I: Ann. Surg. **117**: 28, 1943.

pain. It is a simple matter during the course of an abdominal examination of a patient suspected of strangulation of the small bowel to have the patient assume the position most comfortable for him and then to move him into other positions and ascertain if there is accentuation of the pain in these other positions.

If the patient states he is only relatively free of pain in one certain position (the position he will assume for relief) we believe this fact is highly suggestive of strangulation of the bowel.

As noted by McKittrick,[3] some patients with strangulation complain of pain in the back. In those who show a positive sign of "position of relief" there is apt to be an increase in dorsal pain when they are shifted into other positions.



The "position of relief" usually to be found in patients with strangulating volvulus. Upper and middle, the positions usually assumed as the "position of relief", i. e., on either right or left side with legs slightly drawn up. Lower, the knee-chest position was seen as the "position of relief" in 1 patient with a strangulated loop of intestine.

THE ABDOMINAL EXAMINATION IN OBSTRUCTION OF THE SMALL BOWEL

Probably in no other clinical situation is a careful physical examination so important as when the physician must decide whether a patient has simple or strangulating obstruction of the small bowel. Only after assembling information gained by inspection, palpation, percussion and auscultation of the abdomen can one properly decide which type of obstruction is present, but we believe, as does Wangensteen,[4] that the experienced observer can distinguish between simple mechanical obstruction and that of strangulation in which the blood supply to the obstructing loop is impaired.

Inspection.—We have not found any significant difference in the general appearance of the abdomen in the two types of obstruction. In 10 of our 14 patients with strangulation there was obvious distention of the abdomen, but distention is often seen in patients with simple obstruction. We do not consider this observation helpful.

In most cases of intestinal strangulation the patients, when seen early, do not have sufficient splinting of the abdominal muscles to interfere with respiratory movements.

Palpation.—As Wangensteen [1] has pointed out, when the venous flow to a portion of the obstructed bowel is interfered with "the gut becomes infarcted and a serosanguineous fluid escapes into the peritoneum causing the latter to become sensitive." Abdominal tenderness is therefore present in most patients with strangulation. In fact, tenderness was present in all 15 patients of our group, and in some the tenderness was associated with local or generalized muscular spasm. Rebound tenderness was elicited in certain patients with intestinal strangulation. In 4 patients a mass was palpated.

Such tenderness is not found in simple obstruction of the bowel. Tenderness and muscular spasm usually mean strangulation. The finding of a palpable mass adds further support to this diagnosis.

Rectal and vaginal examinations should be made in all patients with intestinal obstruction because these examinations sometimes give valuable information. In 2 of our cases of strangulation the abdominal mass could only be palpated by rectal or vaginal examination.

Auscultation.—If the physician will auscultate carefully all patients with intestinal colic we believe he will, with the experience thus gained, be able to distinguish between the sounds heard in simple and strangulation obstruction. Prolonged observation is often necessary.

It is difficult to describe the difference between the sounds heard with the two types of obstruction. Early in strangulation sounds may still be present, but we believe that they are (1) heard less frequently and (2) are of somewhat lower tone and pitch than in simple obstruction. The intervals between sounds may be relatively long (up to ten or fifteen minutes), and the duration is usually quite short. As time goes on the intervals of silence lengthen, until finally sounds no longer are heard. Occasionally the abdomen may seem silent even when auscultated early in strangulation. The examiner should then resort to longer periods of auscultation, even up to ten or fifteen minutes. When the other observations point to mechanical intestinal obstruction infrequent, low pitched sounds strongly suggest strangulation.

Percussion.—The observations by percussion are not of significant difference in simple and strangulating obstruction until too late to affect the final outcome. Patients with late intestinal strangulation show free fluid in the peritoneal cavity.

LABORATORY DATA

We agree with McKittrick and Sarris [1] that ordinarily the leukocyte count is not helpful in differentiating simple and strangulation obstruction. We consider their view that a rising leukocyte count is suggestive of intestinal strangulation to be sound. If the patient is seen early in the course of the attack, one will generally find a higher leukocyte count in strangulating than in simple obstruction. A pulse rate above 100 in the early hours generally indicates intestinal strangulation rather than simple obstruction, but a review of our own cases of strangulation shows that the pulse rate was below 100 in 6 cases. Since 5 of the 6 terminated fatally, it would appear that the pulse rate is not an especially helpful diagnostic or prognostic sign.

---

[3] McKittrick, L. S.: New England J. Med. **225**: 647, 1941.

[4] Wangensteen, O. H.: Intestinal Obstructions, ed. 2, Springfield, Ill., Charles C Thomas, Publisher, 1942.

Roentgen ray examination is important in establishing the diagnosis of obstruction of the small bowel but does not appear to be especially helpful in differentiating between simple and strangulating obstruction. The roentgenologic observations were indicative of small bowel obstruction in all our strangulated cases, in 1 as early as four hours after the onset of pain.

TABLE 1.—*Data on Clinical Cases*

Name	Age	Previous Surgical Operation	Type of Obstructing Mechanism	Type of Operation	Cause of Death	Post-operative Survival	Duration of Obstruction
J. T.	7	No	Volvulus of ileum, adhesions	Resection, end to end anastomosis	Survived	....	?
V. F.	21	No	Volvulus of ileum (band)	Exteriorization; 1st stage Mikulicz	Peritonitis	24 hrs.	4 days
M. C.	55	Yes	Volvulus of ileum, cecum and ascending colon	Exploratory laparotomy	Peritonitis	36 hrs.	4 hrs.
F. B.*	78	Yes	Volvulus of ileum	Reduction of volvulus; resection not necessary	Shock	26 hrs.	10 hrs.
J. D.	49	No	Volvulus of ileum (band)	Resection, end to end anastomosis	Anuria (late)	7 days	16 hrs.
J. B.	3	No	Volvulus of ileum (band)	Reduction of volvulus; resection not necessary	Shock (?)	4 hrs.	24 hrs.
C. W.	18	No	Volvulus of ileum (band)	Reduction of volvulus; resection not necessary	Survived	....	4-6 hrs.
M. K.	3	No	Volvulus of ileum (Meckel's)	Reduction and resection of Meckel's diverticulum	Survived	....	8 hrs.
S. B.	46	Yes	Volvulus of ileum (band)	Reduction; resection not necessary	Survived	....	5 hrs.
L. H.†	49	Yes	Volvulus of midileum (band)	Resection, end to end anastomosis	Peritonitis, shock	18 hrs.	48 hrs.
W. B. 1	33	No	Volvulus of midileum (band)	Reduction; resection not necessary	Survived	....	4 hrs.
W. B. 2	35	Yes	Volvulus of midileum (band)	Exteriorization; 1st stage Mikulicz	Shock	Died on operating table	6 hrs.
L. H.	69	Yes	Volvulus of ileum (band)	Resection, end to end anastomosis	Peritonitis, shock	48 hrs.	72 hrs.
G. J.	38	Yes	Volvulus of ileum (band)	Resection, end to end anastomosis	Peritonitis, shock	48 hrs.	66 hrs.
E. J.‡	37	Yes	Volvulus of jejunum (band)	Resection; 1st stage Mikulicz	Renal failure (?)	5 days	16 hrs.
I. S.	27	Yes	Gangrenous loop of ileum (band)	Resection, end to end anastomosis	Survived	....	6 hrs.

* Blood volume 32% below normal. † Blood volume 28% below normal. ‡ Blood volume 64% below normal.

TABLE 2.—*Physical and Laboratory Observations in Intestinal Strangulation*

Name	Onset	Clinical Shock	Significant Distention	Pulse Rate	Position of Relief	Auscultation	Palpation	Roentgen Ray Evidence of Obstruction	White Blood Cell Count	Duration of Strangulation, Hrs.
J. T.	Sudden	No	Yes	130	?	*Fairly silent*	Tenderness, spasm, rebound tenderness, mass	Yes	24,000	?
V. F.	Sudden and severe	No	No	94	Yes plus back pain	Fairly silent	Tenderness, no spasm; mass by rectum	Not done	7,500 to 17,500	6
M. C.	Sudden and severe	Yes	Yes	100	?	Fairly silent	Generalized rigidity	Yes	35,000	4
F. B.*	Sudden and severe	Yes	Yes	70	Yes !	Visible and audible peristalsis	Generalized tenderness	Yes	22,000	10
J. D.	Sudden	Yes	Yes	88	Yes !	Silent	Tense and rigid	Not done	23,000	16
J. B.	Acute	No	Yes	140	?	Visible and audible peristalsis	Generalized tenderness	Yes	11,000	24
C. W.	?	No	No	104	?	Silent	Generalized tenderness	Not done	9,900	4-6
M. K.	Acute	No	No	110	Yes	Normal sounds	Local tenderness and spasm	Not done	16,200	8
S. B.	Acute	No	No	88	Yes	Normal sounds	Tenderness and voluntary spasm	Yes	11,000	5
L. H.	Sudden and severe	Yes	No	110	Yes	Low pitched and infrequent sounds	Slight tenderness	Yes	18,700	4
W. B. 1	Sudden and severe	No	Yes	101	Yes	Hyperactivity early	Moderate tenderness and generalized spasm	No	10,400	4
W. B. 2	Sudden and severe	Yes	Yes	97	Yes	Silent	Generalized tenderness and spasm plus mass	Yes	16,250	6
L. H.	Sudden and severe	Yes	Yes	88	No	Silent	Generalized tenderness plus mass	Yes	16,600	72
G. J.	Sudden and severe	Yes	Yes	88	Yes	Infrequent to silent	Tenderness lower abdomen; extremely tender on rectal examination	Not done	11,700	66
E. J.	Abrupt	No	Yes	120	No	Almost silent	Generalized abdominal tenderness	Yes	7,800	16
I. S.	Abrupt perirectal pain	No	No	80	No	Infrequent and low pitched sounds	Exquisite generalized tenderness; mass by rectum	Yes	12,250	6

THE MANAGEMENT OF INTESTINAL STRANGULATION

All patients with intestinal strangulatioin are apt to develop clinical shock. We believe that shock in this group is a result of serious reduction in the volume of circulating blood. Transfusion of whole blood is therefore mandatory before and during surgical intervention. There is evidence that from 1,500 to 2,000 cc. of whole blood will be required to restore to normal the blood volume in this group of patients. (See table 1, patients F. B., L. H. and E. J., for actual depletion of blood volume as shown by measurements with the dye method.)

The restoration of blood volume should be rapid. While the blood is being administered a Levine tube is inserted and the stomach emptied by suction drainage. If there is clinical evidence of dehydration, isotonic solution of sodium chloride may be administered during this period.

Surgical operation should be delayed only for the proper treatment of shock, as delay beyond four to six hours after the onset of intestinal strangulation invites disaster. Strangulation experiments in the dog indicate that as early as four hours after the establishment of strangulation, as much as a 25 per cent loss of blood may occur. Speed in bringing the patient to operation is therefore imperative.

Our choice of anesthesia in patients not in shock is endotracheal ether combined with intercostal block. For patients in shock, we find intercostal block anesthesia with local infiltration combined with small doses of intravenous pentothal sodium useful and relatively safe. In our experience spinal anesthesia is especially hazardous in patients with strangulating obstruction. In an earlier survey [2] in this hospital, 1 patient with volvulus promptly succumbed after the administration of 100 mg. of procaine hydrochloride intrathecally. Another patient (W. B.) died of shock on the operating table even though only local infiltration and intercostal block anesthesia was used.

Table 3.—*Differential Criteria in Simple and Strangulation Obstruction*

	Simple	Strangulation
Pain	Onset may be insidious, may be abrupt	Onset likely to be sudden and severe
	Periods of relief from pain	Pain apt to be constant with intermittent exacerbations
Vomiting	Practically always present	Always present but tends to occur at more frequent intervals in early hours
Appearance of patient	Generally not very ill in early hours; pain only during periods of colic	Generally appears more ill during early hours; more or less constant pain
Position of relief	Practically never seen	Usually seen in volvulus
Inspection	Early distention seen in both types	Early distention seen in both types
Palpation	Tenderness, local and general, not seen early	Tenderness, local and generalized, sometimes associated with rigidity, seen early
	No masses	Mass (tender) commonly palpated
Auscultation	Synchronous concurrence at periodic intervals of pain and metallic or bubbling sounds	Abdomen may early be "silent" If sounds are present, generally of low pitch and infrequent
Laboratory	White blood cell count not helpful	White blood cell counts, on repeated examination, may increase
	Roentgen ray indicates only obstruction	Roentgen ray indicates only obstruction, not strangulation
Shock	Not seen early in simple obstruction	Sometimes seen early (4-6 hrs.) in some strangulation

After the strangulated loop has been isolated from the rest of the abdominal contents, care must be exercised to determine whether or not it is viable. Should resection be required, anastomosis may be performed either by the closed or open method.

A word might be in order about the significance of hemorrhagic peritoneal fluid. We agree with Wangensteen [4] that it "is observed so rarely in simple obstruction that its mere presence is indicative that search should be made for strangulated bowel." In 1 of our cases (M. K.), the strangulated loop might easily have been missed if a diligent search had not been carried out because of the presence of slight hemorrhagic fluid. One patient in this series had been operated on in another hospital, where a normal appendix had been removed in spite of the presence of hemorrhagic fluid. Some hours later he was referred to Dr. Herbert Lee, who found a loop of strangulated bowel.

THE LETHAL FACTORS IN INTESTINAL STRANGULATION

Of all the factors responsible for the fatal outcome in intestinal strangulation, shock and peritonitis are certainly the most important. It will be seen from table 1 that none of the 8 patients who showed signs of clinical shock when first seen recovered from the surgical procedure even though in 2 cases the operation was performed within approximately six hours after the onset of symptoms. One patient (F. B.) survived the surgical intervention but succumbed to one of the sequels of shock—late anuria (seventh day).

When intestinal strangulation is complete and the surgical operation is delayed many hours, if the patient does not die from shock the chance of peritonitis is considerable.

Shock and peritonitis in acute strangulation of the small bowel are usually due, in the final analysis, to avoidable delay in surgical intervention. Early diagnosis is the responsibility of the medical practitioner as well as the surgeon. When as much attention is given to the problem of strangulation of the bowel as has been devoted to acute appendicitis diagnosis will be made earlier and the mortality will decrease.

In the event early differentiation of simple and strangulation obstruction of the bowel cannot be made the recommendation and treatment outlined by McKittrick and Sarris [1] should be followed; i. e., surgical operation on all patients with obstruction examined within twenty-four hours of onset of symptoms. If this is done, relatively few cases of strangulation will be missed. If a patient has had true strangulation of the small bowel for more than twenty-four hours the lethal factors operate with such devastating finality that there is little chance of successful outcome even with prompt surgical intervention.

CONCLUSION

If the character of onset of the attack, the severity and constancy of pain, the presence of tenderness and/or spasm, the character of intestinal sounds and the position assumed by the patient are carefully considered, the differential diagnosis of strangulating and simple obstruction of the small bowel can be made early. Early diagnosis and early surgical operation are essential if the present high mortality of strangulation of the small bowel is to be reduced to a reasonable level.

ABSTRACT OF DISCUSSION

Dr. Leland S. McKittrick, Boston: The diagnosis of acute small bowel obstruction in its early stages is probably one of the really difficult diagnoses to make and one which is missed early about as often as that in any condition that is seen. Dr. Evans stressed the importance of early diagnosis. You and I, who do not see quite as many of these patients as Dr. Evans does, are not going to be too smart in making an accurate differential diagnosis in the early stages of obstruction. Therefore, if we can make a diagnosis of acute obstruction of the small bowel in the first twenty-four hours of the disease then that patient should promptly be operated on with the expectation that he will do well whether he has a simple or a strangulation obstruction.

In our cases at the Massachusetts General Hospital patients who were operated on within eighteen to twenty-four hours of the onset of symptoms all got well, whether they had a segment of bowel to be resected or whether the strangulation was so early that resection was not indicated. Of those who entered the hospital within the first twenty-four hours of onset and were operated on during the second twenty-four hours, 25 per cent died. After twenty-four hours have elapsed following the onset of symptoms, then the greatest of care must be exercised in attempting to make this differential diagnosis, because if the patient does have a strangulation obstruction and operative treatment is further delayed then that patient has just that much less chance to live. On the other hand, if the patient has a simple obstruction, if vomiting has been profuse and the patient is badly depleted, too early surgical intervention without adequate restitution of fluids will result in a mortality rate which for that simple obstruction will be excessive. Any corrective operation on the badly distended patient in a late stage may well be fatal. Therefore in certain late cases we may have to ignore possible intestinal strangulation and treat them on a basis of simple obstruction in order to save those patients whose bowel is viable, realizing that at this late stage death will probably result if strangulation is present regardless of the treatment instituted. Sudden onset of pain is the outstanding symptom of acute small bowel obstruction. The early scout film is the greatest single confirmatory evidence which we have. However, the interpretation of that scout film is difficult.

DR. EVERETT I. EVANS, Richmond, Va.: My feeling is exactly that which has been stated by Dr. McKittrick; that is, the general management of all bowel obstruction, if seen early. Our chairman's address brought out again the fact that with the advances of physiology we tend to remove our interest more and more from anatomic problems; we tend also to ignore the true surgical problem and at times worry too much about equilibration of the patient with fluid before surgical operation. I should say, however, that we must be slow to decry any effort to minimize the importance of the work that has been done in this field, especially by Dr. Wangensteen and his group. We should add that in patients with obstruction of the small bowel who are seen early, whether or not one is certain of strangulation, it is becoming the experience of more and more groups that early surgical intervention is essentially giving better results. We see each year about 50 to 55 patients with simple obstruction of the bowel in our hospital groups, and the resident staffs are being encouraged to follow what has been outlined so well here by Dr. McKittrick and in his published papers, that the best procedure is early surgical operation. It doesn't take long to administer proper amounts of fluid in those patients with simple obstruction, especially when they are seen early. Surgeons cannot do much about this problem unless the general practitioner or internist who sees most of these patients in the early hours attempts to diagnose early obstruction and gets them to the hospital in time. Unfortunately, in our experience, even the loss of, say, six to eight hours has been too great, and we have had fatal issue when that amount of time has been lost. Early diagnosis, therefore, and early surgical intervention in obstruction is in our opinion important.

Exposure to Mustard Gas.—The toxic effects of mustard vapor on the respiratory tract have been well known since July 1917, when the Germans first used this gas against the Allies. Gilchrist and Matz have described the residual effects in American soldiers eight to ten years after mustard gassing. Less widely known is the fact that many persons employed in the handling of mustard gas and exposed to small quantities of the vapor over a prolonged period of time may sustain damage to the respiratory mucosa which may leave them partially or totally disabled. This statement is based on two and one-half years of observation in the medical department of an industrial plant where over 200 patients have been treated for both the acute symptoms and the residual effects of mustard gas exposure.—Morgenstern, Philip; Koss, Frank R., and Alexander, William W.: *Ann. Int. Med.*, January 1947.

CHANGES IN THE VISUAL FIELDS CONFIRMED BY PATHOLOGIC DIAGNOSIS

DONALD J. LYLE, M.D.
Cincinnati

Ophthalmoscopic examination may reveal papilledema and atrophy in intracranial lesions. It may show vascular and retinal changes indicative of cerebral or general systemic disturbances and it may not show anything, even with involvement of the intracranial portion of the visual system, the so-called cases of cerebral blindness. Another aid to the diagnosis of intracranial lesions, possibly of greater importance, is a thorough study of the visual fields. Here again the examination may be negative, but it should be pursued routinely and with care. When defects in the visual fields are found they may frequently aid in determining the location and nature of a lesion and its activity and prognosis.

Further aid in diagnosis may be had by study of the reactions of the pupil and the state of the extraocular muscles and by observation of the function of the tissues innervated by the trigeminal and facial nerves as they concern the eye. Other neurologic observations may be of assistance. Examination of the spinal fluid, the blood and the urine may be of value. Roentgenologic studies are frequently helpful. Electric encephalography with its localizing and diagnosing possibilities will no doubt develop into another source of diagnostic importance.

In order to derive the maximum benefit from studies of the visual fields one must know the anatomic location, structure and disposition of the elements comprising the visual system. For this reason a brief review of the anatomy of the relevant part of the visual system is presented.

ANATOMY

From the ganglion cells of the retina axons of the third visual neuron pass, as the nerve fiber layer of the retina, to form the optic nerve which courses to the optic chiasm. Here semidecussation takes place, and the axons continue as the optic tract to arborize about the dendrites of the fourth visual neuron in the lateral geniculate body. Clinical lesions have clearly located the position of the fibers from the upper and lower, inner and outer quadrants of the retina and have fairly well indicated the position of the macular fibers. The axons from the macular area of the eye, forming the papillomacular bundle, enter the optic nerve in the temporal side of the papilla, displacing the upper and lower peripheral temporal fibers. These, in turn, crowd and somewhat displace the upper and lower nasal fibers. As the nerve approaches the optic chiasm the papillomacular bundle assumes a central position with the quadrants of the retina approximately represented in their proper relative positions. Passing through the chiasm the temporal retinal fibers continue in the optic tract on the same side, while the nasal retinal fibers cross over to the opposite side. The right half of each retina forms the right optic tract and the left half of each retina the left optic tract. The macular fibers in the papillomacular bundle also partially decussate as they pass through the chiasm to enter the dorsal portion of the optic tract.

Read before the joint meeting of the Section on Ophthalmology and the Section on Nervous and Mental Diseases at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 5, 1946.

As the optic tract proceeds there is a twisting or torsion of all of the nerve fibers, the macular fibers assuming a superior position with a central wedge, the peripheral retinal fibers lying below. The upper peripheral retinal fibers are mesial to and slightly above the lower retinal fibers, which are laterally placed. This torsion proceeds along the course of the optic tract to the lateral geniculate body. In the optic tract fibers representing the retinal quadrants are apparently bunched at first and then separate and intermingle farther back. They terminate in the horseshoe-shaped lamellae of the lateral geniculate body in alternate layers, first from one eye and then from the other. The axons from the upper part of the retina pass to the mesial prong and those from the lower part of the retina to the lateral prong of the geniculate body. This grouping of fibers from one retinal area, especially forward in the tract, probably accounts for the incongruity in defects of the visual fields when lesions are located in the optic tract.

In the optic radiations, fibers spread out and spiral in various planes so that defects of a sector or quadrant of the visual field with small lesions are to be expected. The axons from the median half of the cells of the lateral geniculate body, representing the upper retinal fibers, pass as the upper optic radiations through the upper temporal, lower parietal and occipital lobes, lateral to the posterior horn of the lateral ventricle, to terminate in the sensory cortical visual area, the striate area, of the cuneus above the calcarine fissure. Axons from the lateral half of the geniculate body, as the lower optic radiations, first course forward and around the temporal horn of the lateral ventricle. This is known as Archambault's, Flechsig's, Meyer's or Cushing's loop. The fibers then proceed posteriorly through the temporal and occipital lobes to the visual sensory area of the cortex in the lingual gyrus below the calcarine fissure. The torsion of the fibers of the optic tract is neutralized by the spiraling of the fibers of the optic radiations, so that the upper part of the retina is represented by the upper radiations and cuneus and the lower part of the retina by the lower radiations and lingual gyrus.

The macular fibers probably pass in the optic radiations directly to the occipital pole and its vicinity. The discussion over sparing and nonsparing of the macula still continues. It is known that the macular fibers semidecussate at the optic chiasm and terminate at least for the most part at the posterior pole. Further details are not definitely established. Several reasons have been advanced for the sparing of the macula in lesions which should supposedly include it. Chief among them are the following:

1. There is a crossing of macular fibers in the region of the occipital lobe to the opposite visual cortex through the splenium of the corpus callosum. If this is the case these fibers might pass short of a lesion on one side and course to the opposite striate area.

2. There is a dual blood supply to the macular cortical area from the middle and posterior cerebral arteries. The probabilities are that sufficient circulation to the macular area is maintained by one nutrient vessel if the other ceases to function.

3. There is an extensive macular representation throughout the entire striate area. The inference here is that a lesion must be large enough to affect the entire visuoreceptive area before it can produce loss of macular vision.

4. The patient with loss of half of the macular field unconsciously fixes slightly to one side of the fovea, using a functioning paramacular area to compensate for the loss.

The sensory visual cortex of the occipital lobe, the striate area (area 17 of Brodmann), is joined by intragyral and intergyral fibers (arcuate fibers). These fibers also extend to the adjacent psychic visual cortex, which is also termed the parastriate and peristriate, or parareceptive and perireceptive areas (areas 18 and 19 of Brodmann). These areas are concerned with visual reception and recognition and with revisualization and visual comprehension. Still higher visual centers are those in the angular and supramarginal gyri in the lower posterior parietal lobe. Implication of these various so-called visuopsychic areas produces disturbances in visual perception and recognition, interpretation and evaluation and reaction to visual stimuli. Even though the visual object is seen by the sensory cortex, a disturbance or destruction in the adjacent higher visual areas renders the person blind to its presence or to its proper reception or evaluation.

CLINICAL MANIFESTATIONS

Defects in the visual field and other clinical manifestations of diseases of the visual system vary chiefly as they concern the location and type of lesion. The chief components of the visual system are the retrobulbar optic nerve, the optic chiasm, the optic tract, the optic radiations and the visual cortex. The types of lesions, for the sake of simplicity and organization, are loosely grouped into inflammations, tumors and vascular affections. Inflammations include a variety of conditions, some probably more primarily degenerative than inflammatory. Tumors include, besides neoplasms, other expanding growths, such as aneurysms, hematomas, abscesses, tuberculomas and gummas. Vascular diseases are produced chiefly by sclerotic and thrombotic vessels and, less frequently, by embolic occlusion. Angiospasms may also produce occasional vascular disturbances.

RETROBULBAR OPTIC NERVE

The retrobulbar optic nerve is involved chiefly in inflammations resulting in various types of retrobulbar neuritis which may be divided into extraneural neuritis or perineuritis and intraneural neuritis.

The perineuritis which affects the sheaths of the optic nerve is frequently an extension from the meninges of the brain or from infections of the orbit and the sinuses. The so-called chiasmatic arachnoiditis is a more or less localized form of meningitis usually caused by the coccic infections which involve the optic chiasm and intracranial portion of the optic nerve. The visual fields usually show unilateral or bilateral concentric or sectoral peripheral defects. Meningovascular syphilis produces another type of basal meningitis frequently affecting the prechiasmatic optic nerve. In these cases superior altitudinal loss in the visual field may occur. Tumors of the nerve sheath such as meningiomas and tumors in the neighborhood, both orbital and intracranial, either by direct pressure on or by interference with the blood supply, may produce peripheral changes in the fields. Sclerotic arteries and expanding aneurysms may act in like manner. Injuries to the optic nerves, which are especially vulnerable as they pass through the optic foramen, may produce changes in the visual fields.

Retrobulbar optic neuritis usually presents a central type of defect of the visual fields. The scotomas may be relative or absolute, or both. They may be paracentral, pericentral, cecocentral, sectoral or annular. With these central changes slight peripheral constriction is not uncommon. The changes in the central field may be an extension from perineuritis or they may develop from an infected infarct which forms a metastatic abscess. Systemic infections such as influenza and the exanthematous diseases may produce retrobulbar neuritis. The chronic infections such as syphilis, tuberculosis, arthritis and gonorrhea may produce lesions of the central optic nerve with changes in the visual fields. Syphilis frequently produces definite and progressive *concentric constriction of the visual fields.*

Probably the chief cause of retrobulbar optic neuritis is multiple sclerosis (disseminated sclerosis), one of the demyelinating diseases. This condition seems to have a predilection for the retrobulbar axons of the optic nerve. In these cases the lesions, and changes in the field, are usually unilateral, variable, mobile, fluctuating and fleeting. An acute type is that of transverse neuromyelitis optica of Devic, in which sudden and complete bilateral blindness occurs though one eye may be affected in advance of the other. There may be no change noted in the appearance of the fundi. Other types of demyelinating disorders are the acute disseminating encephalomyelitis usually caused by various infections and fevers and the encephalitis periaxialis diffusa of Schilder, a chronic form which is frequently located in the occipital lobe and optic radiations.

Some of the abiotrophic or early degenerative changes may affect the retrobulbar optic nerve. Leber's hereditary optic atrophy is a good example. It is definitely of a hereditary and sex-linked character and usually affects males. Central blindness frequently develops because of degeneration of the papillomacular bundle. At the same time concentric peripheral contraction may be noted.

Toxic amblyopias from exogenous poisons attack chiefly the subchiasmatic optic nerve. Some authors believe that the retina may also be affected, the axons of the optic nerve from the ganglion cells of the retina being secondarily affected. It is exceptional to find pathologic changes in either location. In the usual type of amblyopia there is a bilateral involvement of the central fields implicating the papillomacular bundle. Tobacco and lead are common examples of poisons having this effect. In tobacco amblyopia the scotomas are usually centrocecal and relative with absolute nuclei. Ethyl alcohol is usually associated with tobacco. Methyl alcohol is extremely toxic and produces permanent destruction of the optic nerve in those who survive. Lead and the inorganic compounds of arsenic produce bilateral defects of the central field frequently with some peripheral constriction.

Peripheral defects of the visual fields in amblyopia are found in poisoning with organic compounds of arsenic, in which there is frequently seen extreme bilateral concentric constriction. Quinine, in those with an idiosyncrasy for the drug, manifests similar changes. Aspidium is in this class.

Chronic types of retrobulbar neuritis are occasionally found. They may resemble toxic amblyopia and are frequently bilateral. The longer the condition persists the less chance there is of recovery with restoration of the areas in the visual fields which have been lost.

In retrobulbar inflammations of the optic nerve a thorough history is necessary *in order to determine the* presence of the infection or poison. Thorough laboratory tests are necessary as well as a roentgenologic examination of *the nasal sinuses, orbit, optic foramen* and prechiasmal area. Occasionally encephalograms may be helpful. Tumors and vascular lesions must be excluded.

OPTIC CHIASM

The optic chiasm is involved chiefly by pituitary tumors, although other neoplastic growths in the neighborhood may also affect it. Pituitary tumors usually first press on the lower mesial fibers of the chiasm, producing a defect in the upper outer quadrants of the visual fields. Frequently one side is in advance of the other. As the tumor expands the upper mesial fibers are affected, resulting in a bitemporal hemianopsia. Then the lower nasal fields become involved, and finally total loss of vision results. The loss in the visual fields usually develops counterclockwise in the field of the *right eye and clockwise in the field of the left eye.* The optic chiasm may be affected by other tumors in the neighborhood such as craniopharyngiomas and meningiomas of the sphenoidal ridge and tuberculum sellae. Tumors of the third ventricle may press forward on the optic chiasm, producing bitemporal and central defects of the visual fields.

In this same area sclerosis of the internal carotid artery as it lies against the optic chiasm may produce binasal or altitudinal defects of the fields. An expanding aneurysm *of the arteries in this location also may* involve the optic chiasm.

Inflammation of the meninges forming the chiasmatic cistern may produce defects of the visual fields, frequently of the altitudinal type. This is seen in chiasmatic arachnoiditis and meningovascular syphilis. Extension of retrobulbar optic neuritis may include the optic chiasm producing bilateral defects of the fields. Plaques of multiple sclerosis may also occur in the chiasm, usually resulting in bilateral scotomas.

In this area roentgenologic examination is usually of great importance. Expanding lesions, chiefly adenomas of the pituitary, produce deformities of the sella and erosion of the clinoid processes and the sphenoidal ridge and may produce shadows which are found chiefly in craniopharyngiomas and certain types of meningiomas and gliomas. Encephalograms and possibly ventriculograms may be necessary to reveal surface or internal disturbances in the cranial cavity. Neurologic and laboratory tests, especially in reference to the *pituitary and the autonomic nervous system,* are frequently of aid in establishing a diagnosis.

OPTIC TRACT

The optic tract is affected chiefly by tumors at the anterior end which are the same as those involving the chiasm. Farther back vascular lesions are usually more frequently found. Tumors of the third ventricle or the temporal lobe may involve the optic tract from within or from without.

The anterior part of the optic tract, as well as the optic chiasm, is supplied by many vessels from the circle of Willis. For this reason it is not apt to be involved in vascular diseases because of its good blood supply excepting from pressure of sclerotic vessels, aneurysm and clot. Farther back the tract is nourished chiefly from the anterior choroidal artery. A thrombosis of, or an embolus in, that vessel produces a homonymous hemianopsia, usually complete.

Because of the distribution of the visual axons in the optic tract changes in the fields are frequently in a sector or a quadrant and are homonymous. However, if the lesion is forward, bitemporal loss in the fields may be found. The edges of the defects in the visual fields are usually sloping and incongruous at the forward end, as the fibers from the crossing have not yet intermingled with the lateral fibers passing straight through the chiasm. The macular bundle of the optic tract may or may not escape the lesion. Forward it is more apt to become implicated, as it lies in the dorsal posterior part of the chiasm from which it passes into the dorsal part of the optic tract.

Inflammation from meningitis of various types, abscess and syphilitic and tuberculous infections may be found in the area through which the optic tract courses. These conditions are less frequently the cause of involvement of the optic tract than are tumors and vascular lesions.

Roentgenologic examination may reveal changes of diagnostic importance, especially at the anterior end of the optic tract, in conjunction with those conditions producing chiasmatic disturbances. As the tract skirts the hypothalamus, which contains the nuclei of the autonomic nervous system, defects in the visual fields may be combined with parasympathetic or sympathetic nervous symptoms. Diabetes insipidus is not uncommon, with involvement of the anterior part of the hypothalamus, and disturbances of heat regulation and blood pressure, among other manifestations, result from affection of the middle and posterior parts of the hypothalamus.

LATERAL GENICULATE BODY

In the lateral geniculate body isolated lesions have not, to my knowledge, been reported or recorded. Therefore involvement of the lateral geniculate body may be included in lesions of the posterior optic tract or of the beginning optic radiations. As the lateral geniculate body is at the retrolenticular end of the posterior limb of the internal capsule, its implication may produce homonymous hemianopsia along with sensory and motor disturbances by diseases of the adjacent superior peduncle of the thalamus and posterior limb of the internal capsule.

OPTIC RADIATIONS

In the optic radiations vascular diseases are the most frequent. As the radiations cover a great part of the superior temporal lobe, the posterior inferior edge of the parietal lobe and the occipital lobe, a large area is involved, so that many localities may be affected and rather large lesions may result. The anterior choroidal artery is the main vessel to supply the anterior part of the radiations, especially the lower visual fibers. In the middle portion of the radiations the middle cerebral artery and in the posterior radiations and visual cortex both the middle cerebral and the calcarine—especially the latter—branch of the posterior cerebral arteries are the nourishing vessels. Frequently thromboses of these arteries, and occasionally emboli, produce disturbances of the visual fields.

Visual field changes are not exceptional in tumors of the optic radiations. Tumors of the anterior temporal lobe affecting the lower optic radiations show defects in the upper part of the visual fields, frequently with some disturbances of audition and equilibrium. Farther back, the lower optic radiations are involved in tumors of the lower temporal lobe and the occipital lobe. Tumors of the upper temporal lobe, the lower posterior parietal and the upper occipital lobe affect the lower parts of the visual fields. In addition, visual hallucinations may occur if the lesion is on the dominant side (left side in the right handed).

Inflammations may affect the optic radiations. Occasionally a case of paraxial diffuse encephalitis of Schilder is seen in which plaques have been produced in the optic radiations. Some types of encephalitis may involve the radiations.

The defects in the visual field from radiation lesions usually show edges sharp and congruous. The macular fibers are usually spared, at least in part, and seem less likely to become involved the farther back the lesion occurs.

Ventriculograms may show an obliteration of a ventricle or its displacement. A pineal shadow also may indicate the presence of a lesion by its displacement. Meningiomas and oligodendrogliomas may produce shadows. Cardiovascular-renal and blood studies are of great importance, as most of the lesions are vascular. Injuries are not infrequent in this location and require thorough study by the ophthalmologist as well as by the neurologist and the neurosurgeon.

VISUAL CORTEX

Visuocortical lesions are also chiefly vascular. The chief arteries supplying this area are the middle and posterior cerebral arteries, of which the calcarine branch is the most important. Defects of the central part of the field usually indicate involvement of the posterior pole. Peripheral changes in the field are probably from lesions farther forward in the striate area. The upper lip of the calcarine fissure, the cuneus, when affected produces a homonymous defect in the lower part of the fields. A lesion in the lower lip of the calcarine fissure, the lingual gyrus, produces a homonymous defect in the upper part of the fields. Because the area of the posterior radiations and sensory visual cortex is relatively great, defects involving a sector or an indentation are seen usually at the inception of an expanding tumor. Vascular lesions frequently but not always produce a larger defect in the field immediately. Small scotomas of homonyous character may indicate a small lesion. If more centrally located in the field the lesion is farther back. Because there is a dual blood supply to the occipital pole, sparing of the macula is more frequent in defects in the fields due to cortical lesions.

Inflammations may involve the visual cortex. Here again toxins and poisons, viruses and bacteria and their products and metabolic and endocrine disturbance may act on the brain. In the sensory visual area loss in the visual fields or irritation is the result. Irritation may produce flashes of light or coarse hallucinations. Farther forward in the psychic visual areas irritation produces more complex visual hallucinations on the left side in the right handed. Visual illusions result from irritation to the psychic visual cortex chiefly from drugs, poisons and toxins.

When the parastriate or peristriate areas of the visual cortex are involved (areas 18 and 19 of Brodmann), visual perception, recognition and revisualization may be lost, especially on the dominant side. With involvement of the still higher centers in the angular and supramarginal gyri, higher visual activities are curtailed.

Loss of vision without changes in the fundus is seen in the functional diseases such as neurasthenia and hysteria. These disturbances will not be discussed.

SUMMARY

By way of generalization, in reference to defects in the visual fields, the following observations may aid in developing and supporting the proper diagnosis.

A. Locations

1. Inflammations are found chiefly forward in the retrobulbar optic nerve.
2. Tumors, especially neoplasms, are more frequently located in the area of the optic chiasm.
3. Vascular lesions more frequently affect the radiations and cortex.

However, tumors, inflammations, degenerations and vascular disturbances may involve any part of the visual system.

B. Onset

1. Inflammations usually produce fairly rapidly changing fields. The chronic infections show less rapid changes but rather a slow gradual increase. Multiple sclerosis produces a rather rapid defect in the field, frequently relative in character, which may, and usually does, disappear within a short time.
2. Tumors, usually neoplastic, grow relatively slowly. So do aneurysms, which, before rupture, act as do tumors. Abscesses, tuberculomas and gummas are usually more rapid in their development and are usually accompanied by inflammatory symptoms. Hematomas from trauma, bleeding tumors and ruptured aneurysms and other vascular disturbances are rapid in the production of loss in the visual fields.
3. Vascular diseases are frequently instantaneous but, as in the case of thrombosis, may give a few days' warning by producing relative and intermittent defects in the visual fields before the circulation shuts down. Hemorrhages and emboli are instantaneous.

C. Duration (prognosis)

1. Inflammations, as a rule, have a tendency to subside, so that the prognosis is relatively good. There is less chance of improvement the longer the defect in the field persists. Finding and eliminating the cause of the inflammation in time is an essential factor. Multiple sclerotic fields have a tendency to disappear in one location but may appear elsewhere. Defects in the visual fields from cerebrospinal syphilis do not, as a rule, improve but usually progress.
2. Tumors show gradual progress in changes in the visual fields unless the pressure is removed. They produce defects in the visual fields both by direct pressure on the nervous elements and by pressure on the nutrient vessels supplying these elements.
3. Vascular lesions behave according to type. There may be some improvement in cases of hemorrhage when absorption or surgical evacuation has removed the pressure. In the cases of thrombosis and embolus, if the blood supply cannot be reestablished the defect remains.

In closing, it might be well to make one or two observations on the charting of visual fields. If the patient is cooperative, targets or spotters of different size should be used with varied illuminations. The color tests may also be used. Frequently perception of color is affected before perception of white, and it thus determines earlier the relative defects in the fields. Reduction of perception of red-green may also indicate involvement of the conduction fibers. Reduction of the perception of blue may suggest cellular or nuclear loss of function. However, many investigators of reputation believe that color tests indicate no more than do white targets of various sizes and different illuminations. They believe that intensity of illumination, size of target and light wavelength of test object (white or color) have a certain equivalent in the visual field.

An important aid is the charting of the relative defects in the fields, especially as they border areas of absolute loss. Comparison of their change of size or width may indicate whether the condition is progressing or receding. These relative defects usually represent the visual structure which is not completely damaged but which has become involved by inflammation, edema, pressure or other factors interfering with its proper function. They will be the next to be destroyed if the condition is progressing and will change from a relative to an absolute defect. On the other hand, if the relative defect becomes narrower or disappears, leaving normal field adjacent to an absolute defect, the process is receding or has abated.

Clinicians are indeed fortunate if these more accurate studies of the visual field are possible. Only too frequently the patient, because of his impaired mental state produced by the condition which has caused the defect in his visual field, is beyond necessary cooperation. If the ophthalmologist could see these patients earlier he might be able to make a greater contribution to the proper diagnosis.

ABSTRACT OF DISCUSSION

Major John S. McGavic, Phoenixville, Pa.: Both the ophthalmologist and the neurologist can profit from a study in which clinical observations are confirmed by pathologic specimens such as Dr. Lyle has just presented. I wish that Dr. Lyle would give us his opinion about sparing of the fixation area in patients with hemianopsia. One important factor brought out by Dr. Lyle bears reemphasis. The areas of perception, recognition and interpretation (areas 17, 18 and 19 of Brodmann) are separately represented in the visual cortex, although they are integrated by intragyral and intergyral fibers. One may, therefore, be misled in interpreting defects in the fields because the patient may see and not recognize, may see and recognize but fail to interpret the image to the examiner, and so forth. Lesions in the angular and supramarginal gyri in the posterior portion of the parietal lobe produce symptoms bizarre to the patient and lead to confusion on the part of both patient and examiner. In other words, the psychic visual area may be involved alone or in addition to the receptive portion of the calcarine area. One must always keep in mind that the determination of visual fields is a subjective examination. Repetition of studies of the fields is therefore extremely important to insure accuracy as well as to follow changes in the defects in the diagnosis of ocular and neurologic disorders. After the liberation of American soldiers from the Japanese prison camps, one began to see many patients with nutritional amblyopia. The majority of these patients had normal peripheral fields with relative or absolute central or paracentral scotomas. The size and shape of the central and cecocentral scotomas varied tremendously, but practically all had cecocentral scotomas for red test objects. Despite all arguments for quantitative fields with variously sized white test objects, there can be no doubt that with these patients it was far easier and more satisfactory to elicit a defect when red test objects were used. Many patients with considerable reduction in visual acuity and with definite central scotomas showed nerve heads which were well within normal limits. These patients had learned to use their eyes to the best advantage—fixing just to one side of the object and shifting fixation rapidly to build a picture from several partial images. None of them complained about anything—all felt that their vision was better than it actually was. I should like to emphasize what Dr. Lyle said, that the ophthalmologist's contribution to diagnosis would be greater if he saw the patient earlier. There can be no question of this. It is too bad that there has not been more teamwork and trading of information between the ophthalmologist and the neurologist. It is my feeling that this teamwork should start between the residents on the neurology and eye services of our hospitals—and continue as they become attending staff members.

Dr. P. J. Leinfelder, Iowa City: At times, pathologic processes cause seemingly impossible symptoms. Bitemporal or homonymous hemianopsia may be caused by a dilated third ventricle which results from a shift of the anterior part of the ventricular system and a kinking of the aqueduct of Sylvius. In producing a homonymous hemianopsia, a frontoparietal tumor may act in two ways. The pressure may be on the ipsilateral tract by herniated brain substance in the region of the uncinate gyrus, or it may be contralateral due to transferred pressure which squeezes the tract between the brain stem and the compressed temporal lobe. Lesions of the internal capsule cause a homonymous hemianopsia with hemianesthesia, but only rarely is the lesion large enough to cause coexisting hemiplegia; if hemiplegia accompanies such a lesion, the accompanying coma precludes diagnosis of the visual loss. Hemiplegia and homonymous hemianopsia are the result of a lesion on the basal surface of the brain in the region where the optic tract swings around the cerebral peduncles and the contained pyramidal tracts. Pituitary tumor may exist without resulting in changes in the fields or without roentgenologic evidence of destruction of the sella. In an occasional patient the syndrome of cerebral tumor is fully developed, with choked disks and increased intracranial pressure but without localizing signs. Careful examination by all methods known to the brain surgeon fails to disclose a neoplasm or reason for the increased intracranial pressure. Such cases at operation reveal turgescence of the brain which is transient but recurring in nature. This syndrome has been named "pseudotumor." Some relief has been gained by trephination, but the choked disk may persist for months and years. I have observed such a case during a period of more than four years, during which time the elevation of the nerve head has been present at each examination but visual fields have remained normal. The textbooks state that temporal pallor is a pathognomonic sign of multiple sclerosis. Temporal pallor is a common physiologic finding and is of no diagnostic importance in multiple sclerosis unless it is accompanied by diminished central visual acuity, which means then that there has been previously existing retrobulbar neuritis which has destroyed some of the visual fibers, produced a real optic atrophy and a central scotoma.

Dr. Donald J. Lyle, Cincinnati: I wish to thank Major McGavic and Dr. Leinfelder for their kind discussion. Major McGavic asked one question which I have answered in my paper, but I did not read the paper. I will just read that paragraph briefly. [. . . Dr. Lyle read the paragraph in his paper commencing with the words "Several reasons have been advanced. . . ."] Those, I believe, are the chief ideas brought forth as to the sparing of the macula. There has been some other work developed, although I believe that includes the four chief causes at this time. I wish to thank you.

PROTECTION OF THE HUMAN BODY

Principles as Applied in a Restraining Harness for Aircraft Pilots

COMMANDER HOWARD R. BIERMAN (MC), U.S.N.R.
LIEUTENANT (jg) RUSSELL M. WILDER Jr., MC(S), U.S.N.R.
and
LIEUTENANT (jg) HARPER K. HELLEMS, MC(S), U.S.N.R.

During the past seven months investigations of the effects of impact forces on the human body have been carried out with the impact decelerator (fig. 1) previously described.[1] In an airplane crash the pilot or aircrewman is flung forcibly forward against his restraining harness. The impact decelerator produces stresses on the subject by jerking the harness backward against the abdomen and shoulders and offers a highly useful and convenient technic for studying impact forces of the order of magnitude of those which are believed to occur in an aircraft crash.

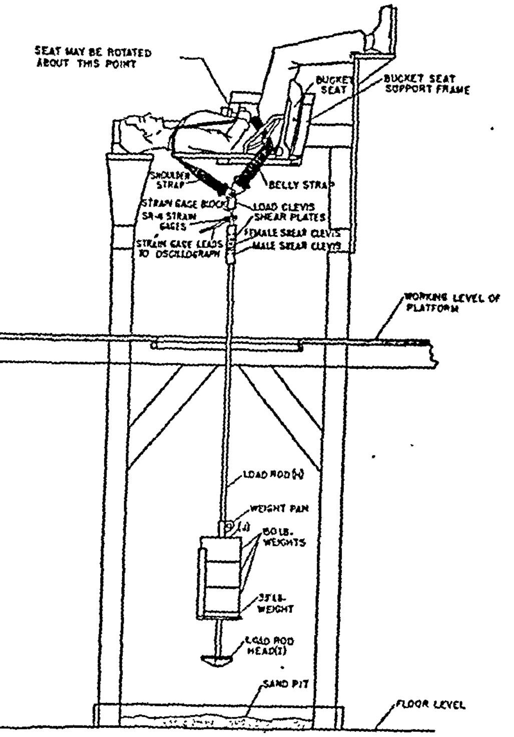


Fig. 1.—The Impact Decelerator: Impact forces are transmitted to the subject through the rod (H) and shoulder and belly straps by the arresting of falling weights (J) by the load rod head (I). These forces are measured by SR4 wire strain gages attached to the rod.

The conventional safety harness transmits impact forces to the subject over a relatively narrow area of body surface.[2] The forces transmitted to the body with this harness during an impact are unevenly distributed and are concentrated at the umbilicus and the clavicular areas, suggesting the need for modification. The first

---

Read in the symposium on "Physiology of High Altitude Flight" before the Section on Pathology and Physiology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

This article has been released for publication by the Division of Publications of the Bureau of Medicine and Surgery of the United States Navy. The opinions and views set forth in this article are those of the writer and are not to be construed as reflecting the policies of the Navy Department.

[1] Bierman, H. R.: *Design of an Impact Decelerator,* Research Project X-630, Report no. 3, Naval Medical Research Institute, Nov. 30, 1945.

[2] Bierman, H. R., and Larsen, V. R.: Distribution of Impact Forces on the Human Through Restraining Devices, Research Project X-630, Report no. 4, Naval Medical Research Institute, Feb. 18, 1946.

modification (model A) employed a vest-type garment with an area of 156 square inches and distributed the forces over twice the area of the body covered by the conventional harness.[3] This harness, constructed of semirigid, drawn, heavy nylon fabric, was capable of offering increased protection against larger impacts.

The limit of tolerance of the human body to impact using the regulation type harness (area about 76 square inches) was found to be about 2,000 pounds impact produced by dropping 165 pounds from a height of 3 feet. When a semirigid vest-type harness (model A) was used (area about 156 square inches) the tolerable limit was increased to 3,300 pounds, obtained by dropping 165 pounds from 5 feet.

The criteria for tolerance of the volunteer subjects used in these experiments were the appearance of cutaneous ecchymoses or the initial suggestion of injury to ligaments, muscle or bone—the type of injury which occurs frequently in football. These clinical observations together with changes in the electrocardiogram and in the respiratory pattern, subjective complaints of the subject and observations of the investigator served to fix the end point of maximal tolerable impact. It was soon found, however, that the impact curve recorded by the strain gages followed a fairly characteristic pattern for any type of semirigid harness (fig. 2).

Figure 2 shows a strain-gage tracing of a 10,000 pound impact applied to a dummy in a semirigid harness. The impact was produced by dropping a 500 pound weight from a height of five feet, equivalent to 2,500 foot-pounds of energy. The duration of impact is 0.17 second, but its maximum force occurs during the first 0.06 second. The sharp peak represents the type of impact force which the subjects have found to be least tolerable. A human being probably could not survive this impact of 10,000 pounds. Since an effective, protective harness must prevent this full impact from reaching the subject, this drop of 500 pounds from five feet was used for the final test purposes. A reference to the "maximal load" means this drop involving 2,500 foot-pounds which produces a 10,000 pound peak impact on a dummy using a semirigid harness.

Since the torso is asymmetric and since various parts of the body are more resistant to impact than others it is essential that provision be made to distribute the forces to the parts most capable of absorbing the energy of the impact. This distribution of impact forces must also be such as to minimize shearing effects on the body caused by uneven forces.

Further investigations with the impact decelerator and high speed cinematography yielded information concerning the effects of the initial part of the impact. The rate of loading was found to bear a relationship to the maximal tolerable load.[4] Rapid application of the impact causing the peak to occur in less than 30 or 40 milliseconds was exceedingly uncomfortable. In general, the slower rates of loading were preferred by the subjects.[5]

Another series of experiments indicated that those undergoing impact prefer the force to be evenly applied. Irregularities of the force proved to be particularly disagreeable.

The potential energy produced by an impact is proportional to its force multiplied by the distance traveled. Large peaks of force can be effectively avoided by slightly increasing the distance of travel. Undrawn nylon elongates in direct proportion to the kinetic energy applied. It has insignificant recoil. This material can be made so that it begins its stretch at loads below the injury threshold.

The lower curve of figure 2 represents a desirable and practical impact force whose characteristics are based on previously obtained data. The curve rises slowly. It has no irregularities, and it stays below the injury producing level. Its plateau is maintained for 0.15 second before it drops off to the base line. Its duration is longer, 0.24 second as compared to 0.17 second, but it represents the same "maximal load." Although its plateau is 3,250 pounds, it occupies the same area on the graph (contains the same energy) as the shorter impact whose maximum peak is 10,000 pounds.

It was felt that an impact which closely followed such a force-time pattern would be least likely to produce injury. Three harnesses (models A, B and C) were constructed in an attempt to approximate this curve and thereby allow the human body to withstand safely larger impact forces. Model B harness was used in the initial stages of development of the principles for protection against impacts. It was discarded in favor of a later and more finished model.

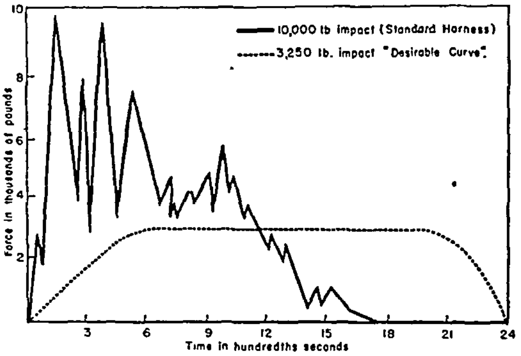


Fig. 2.—Strain gage tracing of an actual 10,000 pound impact on a dummy contrasted with "desirable" impact force curve.

EXPERIMENTAL DESIGN

The impact decelerator was used to produce impacts to test the new restraining harness (model C) on volunteers. A "maximal load" was utilized. Measurements of the total force as well as of the pressure exerted by the harness against the anterior wall of the chest were recorded by small wire strain gages.

The model C harness covers the thorax and abdomen and has an area of 156 square inches (fig. 3). The harness is a combination shoulder strap and lap safety belt. It is in the form of a vest which has two straps leading from the shoulders and two straps leading laterally from its abdominal portion. The vest portion of the harness which is in contact with the thorax and abdomen is made of undrawn nylon duck (90 by 61 count by yarn). The strap material is made of undrawn nylon[6] only in the lengthwise direction. The cross filler thread is drawn nylon and does not stretch significantly during impact. The vest material stretches slightly in both directions on impact, permitting the garment to form-fit the torso and thus distributing the load in proportion to the pressure exerted by the body contacting it. Since undrawn nylon has a lower elastic constant than conventional harness webbing it will stretch more before the draw load is reached and will, therefore, apply the load more gradually. As soon as the impact load reaches the draw load of the undrawn nylon strap material, which is placed at an impact load known to be safe for human beings, the strap will increase in length in an amount related to the force developed. It will continue to elongate without recoil until it reaches a limit beyond which it stretches like drawn nylon (fig. 5).

---

[3] Bierman, H. R., and Hellems, H. K.: Increased Protection to Impact Forces Brought About by a Larger Area of Distribution, Research Project X-630, Naval Medical Research Institute, to be published.

[4] Bierman, H. R., and Larsen, V. R.: *Reactions of the Human to Impact Forces Revealed by High Speed Motion Picture Technic*, Research Project X-630, Report no. 5, Naval Medical Research Institute, April 25, 1946.

[5] Bierman, H. R.; Hellems, H. K., and Wilder, R. M., Jr.: The Rate of Loading of Impact Forces and Its Relationship to the Tolerance of the Human to Maximal Loads, Research Project X-630, Naval Medical Research Institute, to be published.

[6] *Undrawn nylon as yet remains in the experimental stage.*

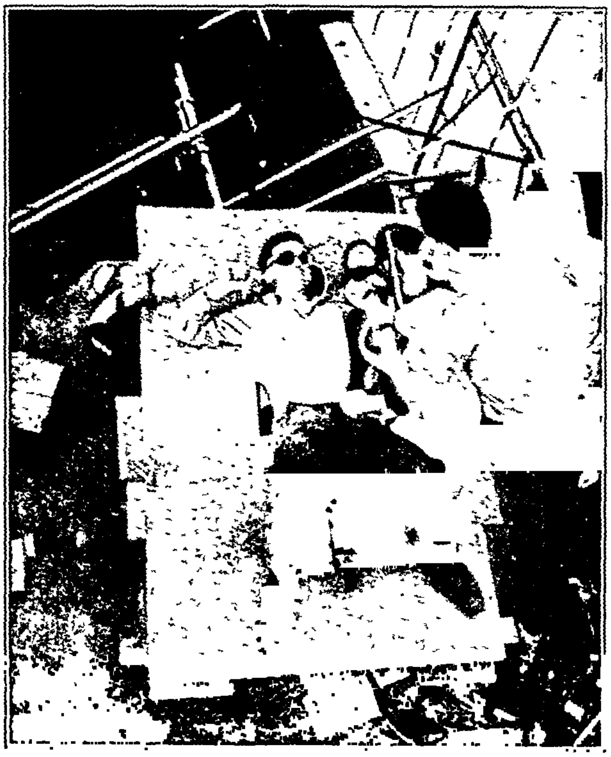


Fig 3.—Subject wearing model C harness on the impact decelerator. Measuring devices (ear photo cell and respirometer) are also shown.

RESULTS

Impact forces were gradually increased to a "maximal load" and were easily tolerated by volunteers using the undrawn nylon (model C) harness (fig. 5). The effect of this impact on the subjects while wearing the model C harness was considerably less distressing than in previous tests using a semirigid harness with loads one-fifth this magnitude. The subjects also felt that the impact load was applied more gradually and with less shock than if a semirigid harness had been used. The volunteers reported that the load during impact was distributed more comfortably over the torso. Specific areas of pressure were not observed beneath the harness. Untoward reactions were not apparent. The subjects stated unanimously that they preferred the "maximal load" with the model C harness to 2,000 pound impacts (165 pounds dropped from 3 feet) with the semirigid (model A) harness.

Physiologic data recorded during and after varying impacts with different harnesses are to be presented in a separate report.[7] These data closely parallel the subjective reactions of the volunteers. With the model C harness physiologic changes did not occur comparable to those seen after impacts delivered when the semirigid harness was worn.

With the factors presented in the summary of this report incorporated in one harness (fig. 4) it has been possible to protect a person against 500 pounds dropped 3 feet with but 6 inches of decelerative distance. The material in the model C harness begins to stretch at a draw load of 2,200 pounds. With "maximal loads" the model C harness stretched 13 inches. Using undrawn nylon that begins to elongate at higher draw loads, the harness stretch for the "maximal load" will be less.

COMMENT

The effectiveness and adaptability of a vest-harness device for the protection of persons in aircraft against linear acceleration depends on the character of the force encountered and many other factors that can be unequivocally evaluated only by experimental aircraft crashes. The data outlined comprises the underlying principles employed to secure maximal protection against the type of force produced by the impact decelerator and the demonstration of the comparative value of different types of harness to achieve this type of protection.

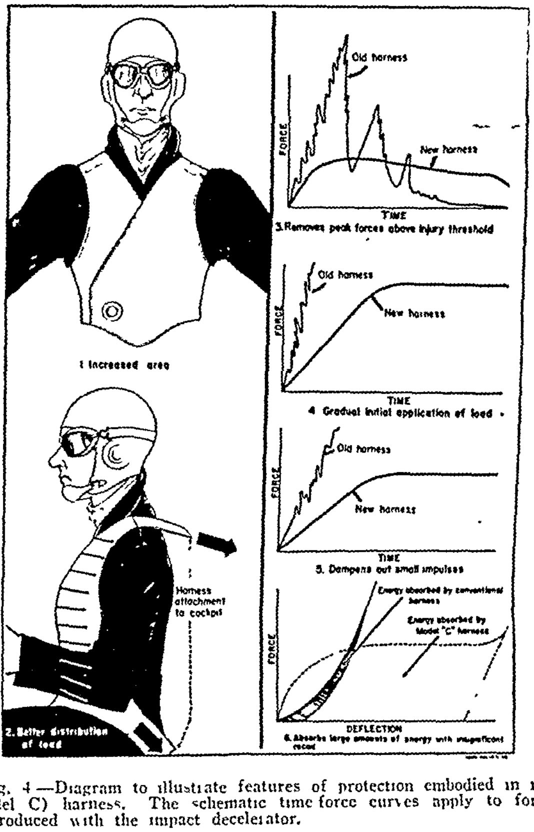

1 Increased area
Harness attachment to cockpit
2. Better distribution of load
Old harness
New harness
FORCE
TIME
3. Removes peak forces above injury threshold
Old harness
New harness
FORCE
TIME
4 Gradual initial application of load
Old harness
New harness
FORCE
TIME
5. Dampens out small impulses
Energy absorbed by conventional harness
Energy absorbed by Model "C" harness
FORCE
DEFLECTION
6. Absorbs large amounts of energy with insignificant recoil

Fig. 4—Diagram to illustrate features of protection embodied in new (model C) harness. The schematic time force curves apply to forces as produced with the impact decelerator.

The conventional harness protects effectively against impacts of 2,000 pounds on the impact decelerator. Subjects using a harness of larger area over the thorax and abdomen have tolerated impacts of 3,000 pounds. When such a harness incorporates the features of maximal area and more equal distribution to the torso, the human can tolerate greater impact loads. If the rate of loading is slowed and irregularities in the force applied are removed, the injury threshold is still further raised. And if, in addition to the above factors, a small distance of controlled stretch without recoil is employed, a "maximal load" can be effectively absorbed without injury.

---

[7] Bierman, H. R.; Wilder, R. M., Jr., and Hellems, H. K.: The Physiological Effect of Compressive Forces on the Torso, Research Project X 630, Naval Medical Research Institute, Report no. 8, Dec. 19, 1946.

It is known from previous studies[8] that a person wearing a semirigid harness can successfully withstand impact loads only as high as 3,000 pounds without tissue damage. Attempts to exceed this force have led to injuries.

The basic protective principle in the model C harness is the stretching of the undrawn nylon without recoil under a draw load below the injury threshold for body tissues. The excess energy which would otherwise cause tissue damage is absorbed by the harness without injury to the wearer. It is this type of protective deceleration involving either the stretching of material or the absorption by material compressed through distances of the order of 6 inches that no doubt enabled persons as reported by DeHaven[8] to survive falls estimated to exceed 200 g. (The symbol g denotes the force of gravity.)

It follows then that the draw load for a protective harness for use in aircraft should be set at a reasonable level below that of the injury limit. This is the critical consideration. Higher draw loads will decrease the amount of decelerative distance but at the expense of probable tissue damage.

Fig. 5.—Closeup of shoulder strap. Note the difference in distance between the ink marks in the stretched and unstretched portions of the strap. Prior to impact these marks were equidistant.

ADDENDUM

An investigation of experimental aircraft crashes has been completed since this paper was given. Nine aircraft were crashed into a solid dirt barrier at approximately 100 miles per hour simulating the forces involved when a stalled aircraft crashes head on into the ground from 300 to 500 feet. The planes decelerated within 5 feet. Both the aircraft structure and anthropomorphic dummies in the aircraft were instrumented. High speed cinematography permitted further visual and physical analysis. Severe, nonuniform accelerations of 0.05 to 0.15 second were found with the conventional semirigid straps. The decelerating vest lengthened the duration and reduced the peak force significantly, similar to its action and effectiveness in the laboratory. Full results of this study are in preparation.

The available seat-to-gunsight distance varies for all aircraft[9] and is the critical factor toward limiting the maximal protection one can afford such personnel utilizing the principle of added deceleration.

In a fatal airplane crash whose duration approaches 1 second, it is believed that impacts of lethal magnitude are produced during only a brief portion of the total time (fig. 7). It is felt that adequate protection against these accelerative peaks is the first essential in the saving of lives otherwise lost through crash injuries.

In an aircraft crash the forces are applied first to the aircraft structure and then transmitted to the pilot through the structures leading back to the seat and its attachments to the restraining devices. During such transmission of force, there is undoubtedly an absorption of energy so that the force reaching the subject is less than the initial force at the point of the impact of the aircraft.[10] The amount of energy that can be absorbed by the aircraft structure during a crash is unknown. Whatever this absorbed energy, which may be termed factor x, it acts to protect the person. Hence, if the model C harness protects the wearer against 40 g, it should then suffice to protect him against impact forces developed in aircraft that crash with forces exceeding 40 g by the unknown structural absorption factor x. Therefore, it is apparent that the cockpit must be made sufficiently strong to resist forces of at least this magnitude.

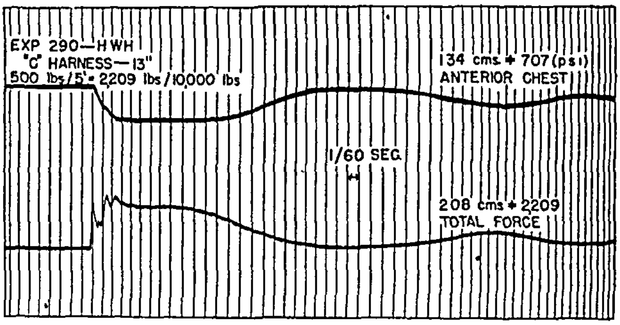


Fig. 6.—Strain gage recording on subject H. W. H. wearing model C harness of a maximal impact produced when 500 pounds was dropped from 5 feet on the impact decelerator. The upper curve represents the pressure record produced by the vest pressing against the anterior wall of the chest; 1.34 cm. of deflection of the curve is equivalent to 7.06 psi. The lower recording is a total force curve as measured by the block gage; 2.08 cm. of deflection represents 2,209 pounds impact force. Timing lines are one-sixtieth second. It can be seen that at no time does the subject receive more than 2,209 pounds impact despite the fact that this same load would produce 10,000 pounds on a dummy had a semirigid harness been used. (Note: psi, pounds per square inch.)

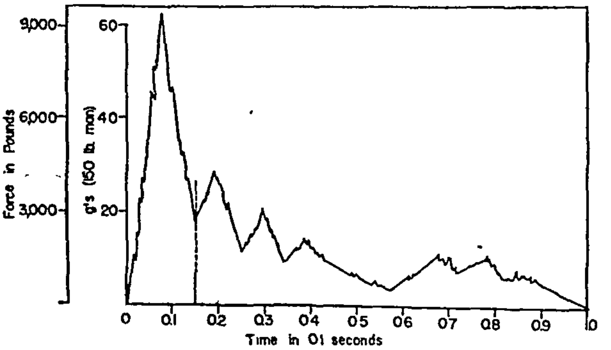


Fig. 7.—Hypothetic illustration of the impact forces occurring during an aircraft crash of 1 second total duration. The injury threshold is exceeded only during the first 0.15 second.

SUMMARY

1. A restraining harness for aircraft pilots has been developed which has successfully protected volunteers against 2,500 foot-pounds delivered on the impact decelerator by dropping a 500 pound weight 5 feet. This impact force expended in 0.15 second on a dummy

---

[8] DeHaven, H.: Mechanical Analysis of Survival in Falls from Heights of Fifty to One Hundred and Fifty Feet, War Med. 2: 586-596 (July) 1942.

[9] Hellems, H. K., and Bierman, H. R.: Characteristics of Motion of Personnel Undergoing Deceleration Within a Cockpit, Research Project X 630, Naval Medical Research Institute, to be published.

[10] Bierman, H. R.: A Study of Methods of Intentionally Crashing Aircraft with Purpose Toward the Survival of Personnel, C. A. M. Report no. 496, Feb. 21, 1946.

enclosed in a semirigid harness is featured by 10,000 pound peaks as measured by strain gages.

2. The factors which contribute to the effectiveness of this harness are: (*a*) distribution of the impact load over a large body area; (*b*) distribution of the impact load to regions of the body best able to withstand high impact forces; (*c*) gradual rate of application of force due to high initial elasticity of the material; (*d*) dampening out of small irregularities during the period of impact, and (*e*) the property of the material to elongate inelastically when the applied force reaches a predetermined tolerable limit, permitting the absorption of large amounts of energy.

The principles outlined in this report may be applied to protection against many other types of large accelerative forces that may be encountered, for example, in automobile and train accidents.[11]

GONIOTOMY FOR CONGENITAL GLAUCOMA

Urgent Need for Early Diagnosis and Operation

OTTO BARKAN, M.D.
San Francisco

Congenital glaucoma in the past has resulted in a high percentage of blindness, due to lack of an adequate operation.

Anderson[1] stated: "There is no division of opinion regarding the severity of the visual loss and its progressive nature in spite of treatment. Seefelder found that 81 per cent of his series of 60 eyes were quite or almost blind. Ten of the 46 patients were in blind asylums. In only 15 was the corrected vision as good as 6/60"

In 1941, I reported on 17 patients with congenital glaucoma operated on by goniotomy.[2] In the present article results of goniotomy performed on 76 eyes are recorded. Goniotomy preserved useful vision in most cases. When combined with early diagnosis, it gave excellent visual results. A plea is made for early diagnosis and prompt adequate operation.

The observations and conclusions on diagnosis, pathologic conditions and surgical treatment presented in this communication are based on my experience during the past ten years in a series of 51 children and infants afflicted with infantile or congenital glaucoma. Of the 76 eyes operated on by goniotomy, in 66 the operation normalized pressure and maintained or restored vision over periods ranging from one to ten years. In 10 eyes the operation was unsuccessful. Eleven eyes, 10 of which had been previously trephined, were in an advanced degenerative stage which did not permit goniotomy. All patients were private patients who lent themselves well to careful analysis. Detailed operative technic including modifications recently reported[3] will be published in a future article.

DEFINITION AND TERMINOLOGY

The term "congenital glaucoma" is used to imply that the cause is congenital rather than that the condition is clinically evident at birth. Although symptoms are often present at birth, in many cases they do not occur until the age of 2 or more months. For this reason the term "infantile glaucoma" also appears suitable, because it implies that the condition may occur at any time during infancy. The enlargement of the eyeball suggested by the time-honored term "buphthalmos" or "ox eye" represents an advanced stage of the condition. Such a term tends to make for a fateful delay in diagnosis since, as is known, the majority of cases of infantile glaucoma show congestive symptoms long before the eye is manifestly enlarged. Diagnosis should, if possible, be made soon after the onset of congestive symptoms and should not be deferred until enlargement of the bulbus becomes obvious. The term "congenital or infantile" glaucoma would appear appropriate, therefore, for the purpose of early diagnosis and treatment, because it suggests onset at birth or during infancy and does not connote pronounced bulbar enlargement as does "buphthalmos."

DIAGNOSIS

The early signs in congenital or infantile glaucoma are often of a congestive and irritative nature. In the present series out of 87 eyes, 70 showed congestive symptoms at the time of onset.

The congestive symptoms which are caused by increased pressure consist of (1) corneal cloudiness, minor or extreme; (2) hyperemia of the bulbar conjunctiva, slight to moderate; (3) photophobia, which may be extreme; (4) epiphora, and (5) blepharospasm.

In 30 eyes cloudy cornea was present at birth. In 35 eyes the onset of congestive symptoms appeared between the first and fourth months. In 11 eyes the onset was between the fourth and ninth months. Some increase of pressure and enlargement of the eyeballs was present before congestive symptoms appeared, since these children are often described as having had *especially beautiful (i. e. large) eyes. This appearance* in otherwise normal-looking eyes should arouse suspicion. Usually, however, the onset of congestive symptoms is the feature which calls attention to the condition; the onset is often rapid and may be even sudden. Such was the case in 6 infants in this series in each of whom cloudiness of the cornea was discovered by the mother when the infant was taken up in the morning; the eyes had been clear the previous night. In 1 case the cloudiness was discovered when the infant was taken up from its afternoon nap.

The cloudiness of the cornea is often associated with photophobia, which may be so intense that the eyes cannot be opened except in the dark. For this reason it was impossible to obtain preoperative photographs in many cases. Figure 1 illustrates moderate cloudiness of the cornea. Figure 2 shows the same patient postoperatively. Figures 3 and 5 illustrate preoperative congestive signs of minor degree which permitted of photography. Figures 4 and 6 show the same patients postoperatively. In the case of T. M., aged 11 months, the eyes were of normal appearance until the age of 6 months. When after whooping cough and pneumonia the mother noticed cloudy corneas. From then on the child was extremely photophobic. It spent its life playing at night in a dark room and sleeping during the day. When brought for examination it kept its head buried in its mother's bosom. A glimpse of the eyes could be obtained only by separation of the lids by force because of the intense blepharospasm. Ten days after the operation the corneas were clear and the photophobia almost absent. Figure 7 shows this patient sixteen months after the operation. The corneas are clear; vision is excellent.

---

[11] With the decelerative distance permitted in these cases, one may apply such information to any linear accelerative force and predict with reliability how much protective accelerative distance is needed for such contingencies as a blow on the head, falling on a deck, running into the edge of a table or an automobile bumper hitting a leg, provided, of course, one knows what the accelerative curve is to be for that instance.

Read before the Section on Ophthalmology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946

[1] Anderson, J. R.: Hydrophthalmia or Congenital Glaucoma, London, Cambridge University Press, 1939, p 104.

[2] Barkan, O. Operation for Congenital Glaucoma, Am. J. Ophth. **25**: 552-568 (May) 1942

[3] Barkan, O. Goniotomy, Am J. Ophth. **28**: 1133-1134 (Oct.) 1945.

The corneal cloudiness and lack of luster which are characteristic of the early stage can be shown by staining with fluorescein sodium to be due chiefly to a disturbance of the epithelium. I am convinced that it is largely this disturbance, consisting of roughening of the corneal epithelium, which is the cause of the irritative symptoms and photophobia; these in turn seem to be aggravated by exposure to air and light.

A physician who first sees the child with these congestive symptoms is apt to make a diagnosis of conjunctivitis, blepharitis or keratitis He is not prone to think of glaucoma because the term "buphthalmos" is associated in his mind only with enlargement of the eyeball The resulting delay in arriving at the correct diagnosis and institution of proper and adequate treatment may be tragic, for by the time that the eyeball is strikingly enlarged the patient is usually well on his way to partial or total blindness Therefore, in every case in infants in which irritative phenomena or corneal cloudiness is present, even though the bulbus does not appear enlarged, glaucoma must be suspected and intra-ocular pressure tested with a tonometer

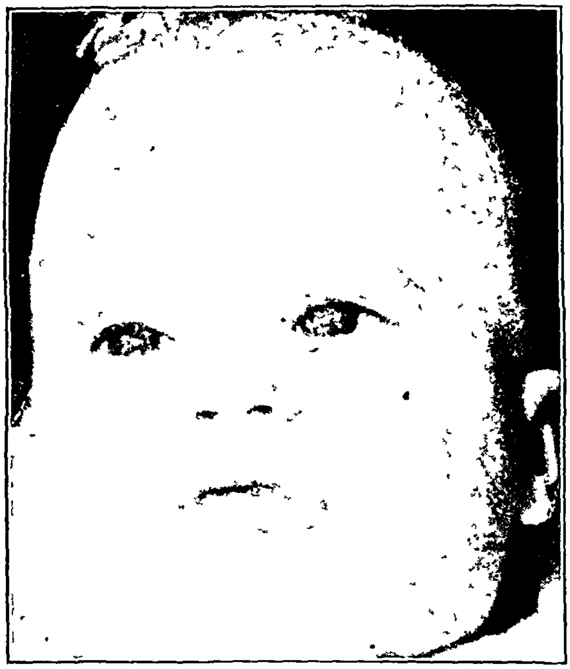


Fig 1 (preoperative)—P O Q, aged 5 months, first seen July 25, 1944 Cloudy corneas developed six days before Patient showed slight photophobia and tearing since birth Pupils are in miosis due to three instillations of 5 per cent solution of prostigmine every three hours

The tension should always be measured with the patient under ether anesthesia which must be deep at the moment of measurement. Other general anesthetic agents have proved unsatisfactory. It has been found that the tension may vary 10 to 15 mm of mercury, depending on the depth of anesthesia, and that only when the patient was completely relaxed was the tension constant. Cases have been observed in which increased tension due to insufficient anesthesia led to an incorrect diagnosis of congenital glaucoma. In the present series of cases in which the pressure was elevated, 5 per cent solution of prostigmine was instilled in the eyes every three hours, and goniotomy was performed as soon as possible

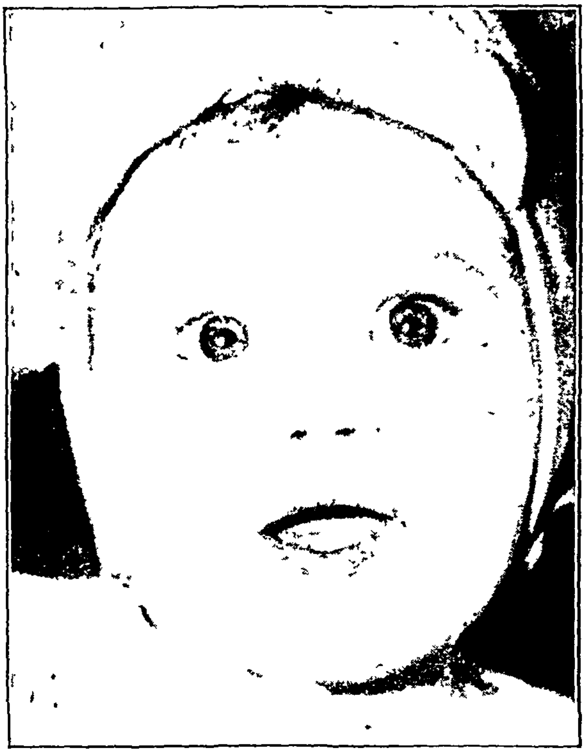


Fig 2 (postoperatively)—P O Q, aged 2½ years From Aug 9, 1944, to Oct 2, 1945, four goniotomies were performed on each eye The last operation on the right eye was nine months ago, and on the left eye eighteen months ago Note clear corneas, normal appearing eyes and complete absence of symptoms Tension (McLean) March 17, 1946, was 34 mm in the right eye and 34 mm in the left eye without use of miotics Refraction was —2 00 sphere in each eye Ophthalmoscopic examination showed normal appearance of heads of optic nerves

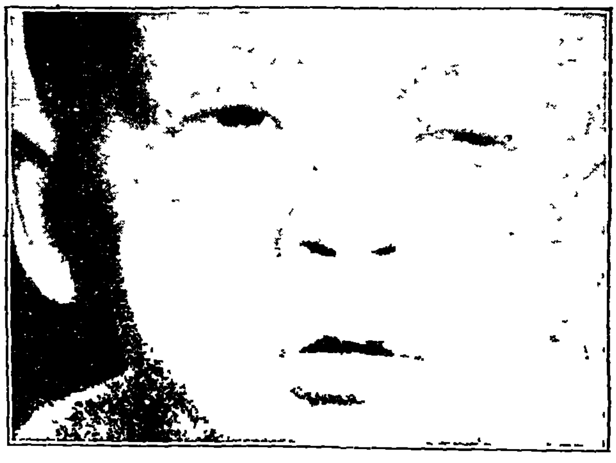


Fig 3 (preoperative)—T C, aged 11 months, first seen July 10, 1942 Two months previously, on May 11, 1942, cornea of left eye became cloudy overnight There were photophobia and tearing The eye could be opened with difficulty, the bulbus was enlarged

In cases in which the cornea is sufficiently transparent one finds on careful gonioscopic examination characteristic evidences of congenital glaucoma in the angle of the chamber

CAUSE OF REDUCED VISION IN INFANTILE GLAUCOMA

Anderson[4] has pointed out that the cause of the reduced vision in infantile glaucoma is usually regarded as being atrophy of the optic nerve and one or more disorders in addition. In the present series atrophy of the optic nerve and others of these disorders were not the original cause but were the result of progressive enlargement of the eyeballs and of degeneration of tissue associated with the late, advanced stage of the disease. The primary cause of reduced vision in most cases in the series was a disturbance of the cornea. This disturbance begins with corneal cloudiness (edema?). It appears to coincide with the onset of increased intraocular pressure. If allowed to persist it is followed by permanent scarring of the cornea with associated irregular astigmatism and ensuing amblyopia of greater or less degree. Those patients in whom the corneal cloudiness was relieved within a few days after its onset acquired acute vision. Therefore, prompt relief of corneal cloudiness seems to result in two great benefits: 1. The degree of permanent residual corneal scarring and irregular astigmatism is minimized. 2. The duration of the impediment to development of vision during the period of growth is shortened, and consequently the opportunity for development of amblyopia is minimized.

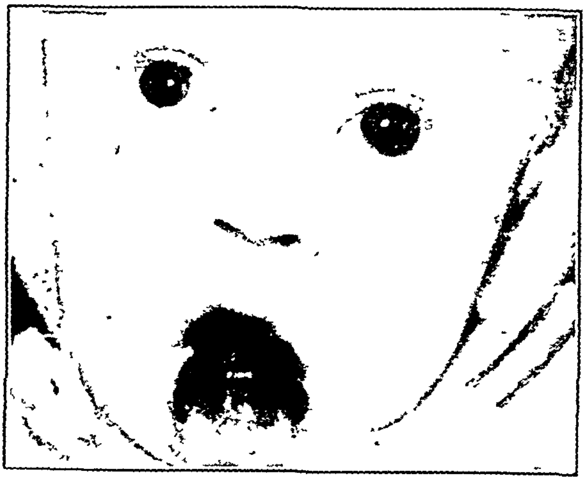


Fig. 4 (postoperative).—T. C., aged 14 months, three months after goniotomy was performed on the left eye, on August 21, 1942. Note clear cornea. The left eye is slightly enlarged, but is otherwise normal in appearance. On May 25, 1944, twenty-one months after the operation, tension (McLean) was 29 mm. in the right eye and 28 mm. in the left eye without use of miotics. Refraction was as follows: right eye, −1.00 cyl. ⊂ −1.00 cyl., axis 180; left eye, −3.50 sphere. Gonioscopy of the left eye showed stripping of angle in one third of its circumference. Ophthalmoscopic examination showed wide shallow excavation of the head of the optic nerve of the left eye but no atrophy.

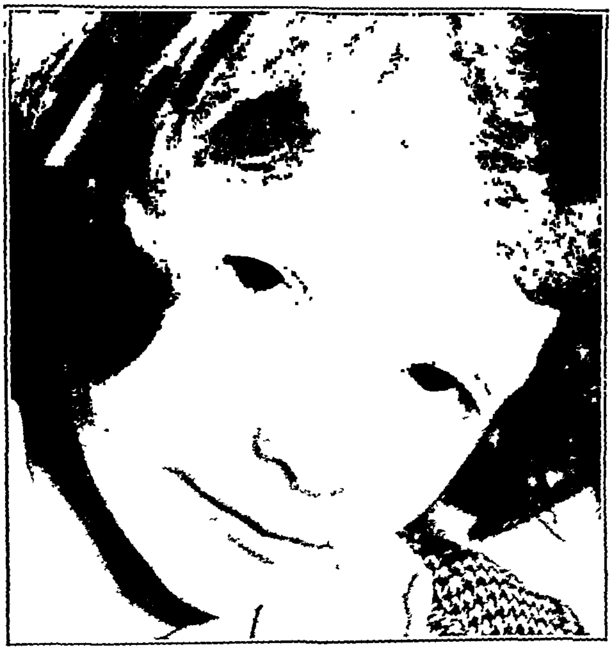


Fig. 5 (preoperative).—J. V., aged 6 years. Since birth left eye was slightly larger and cloudy, there was some tearing. When first seen May 10, 1943, tension in right eye was normal, and in left eye was + 1 to + 2. Photograph shows patient avoiding light. There is some tearing.

EFFECTS OF HYPERTENSION

1. *Corneal Cloudiness.*—Corneal cloudiness is the main characteristic of the congestive phase of the early stage and is at this stage completely reversible surgically and in some cases by miotics. The cloudiness usually occupies the central area. In cases of severe disease it may cover the entire cornea, leaving only a strip adjoining the limbus clear. Fluorescein sodium stains such corneas. Prolonged exposure to air, such as occurs when the blinking reflex is prevented while the patient is under general anesthesia, increases the cloudiness and staining within a few seconds; if the lids are kept closed for a few minutes these decrease. That the corneal lesion is at least partially dependent on exposure is confirmed by its characteristic localization in the zone of the palpebral fissure.

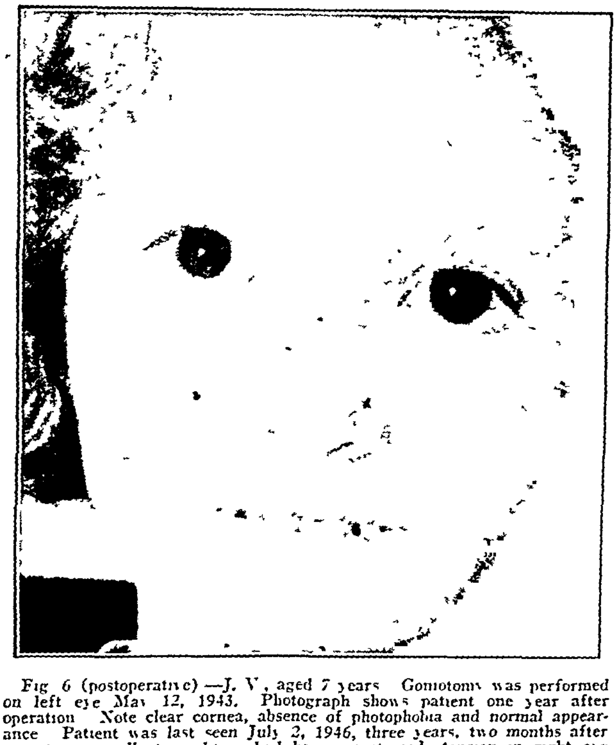


Fig. 6 (postoperative).—J. V., aged 7 years. Goniotomy was performed on left eye May 12, 1943. Photograph shows patient one year after operation. Note clear cornea, absence of photophobia and normal appearance. Patient was last seen July 2, 1946, three years, two months after operation; excellent condition had been maintained; tension in right eye was 31, in left eye 33 (McLean), without miotics; media were clear; ophthalmoscopic examination showed wide shallow excavation of head of optic nerve not extending to the rim; color of disk was good. Vision without correction, in right eye, is 0.8; in left eye, 0.4. With correction, vision in left eye is −0.50 sph. ⊂ −0.75 cyl., axis 90, = 0.6 and J 2.

The roughened epithelium appears to be the cause of the irritative symptoms, which in turn are aggravated by exposure to air and light. These irritative symptoms promptly disappear after normalization of pressure.

---

[4] Anderson,[3] p. 105.

coincident with the simultaneous restoration of corneal luster and epithelial integrity. Clinically the child's comfort closely parallels the epithelial integrity. Patients presenting high intraocular pressure and good corneal luster are usually comfortable and show no trace of photophobia or other irritative signs. Patients presenting lower pressure and poor corneal luster display irritative symptoms. The tolerance of the cornea to increased pressure manifests great individual variation. In some cases in which the tension is 50 mm. (McLean) the cornea may remain clear and irritative symptoms be absent during the course of many months; in others the development of the same degree of tension may immediately produce definite cloudiness and irritability.

Cloudiness of the corneas at this early age sometimes is associated with nystagmoid movements. In 2 cases these were relieved by clearing of the cornea. To illustrate: J. McL., born with cloudy corneas, presented pronounced nystagmoid movements when first seen at the age of 5 months. Three weeks after normalization of pressure in both eyes by goniotomy, these had greatly decreased. They disappeared almost entirely in the course of the next several months. In the case of J. H., aged 3 months when first examined, corneal cloudiness had developed two weeks previously. During the interval of fifteen days which elapsed between operations on the two eyes nystagmoid movements made their appearance. Two weeks after operation on the second eye, when pressure was normalized and the corneas were clear, these disappeared.

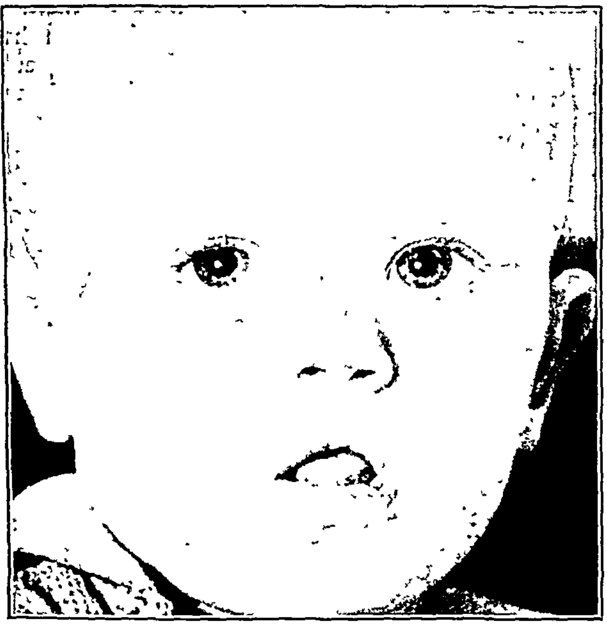


Fig. 7 (postoperative).—T M, aged 11 months, first seen July 14, 1943. After whooping cough and pneumonia at the age of 6 months both corneas became cloudy and photophobia was extreme, so that the eyes could not be opened in daylight. Goniotomy was performed six months after onset of symptoms, on the right eye on May 17 and on the left eye on May 20, 1943. Nine days after the operation the corneas were clear, eyes were open and patient tolerated light well. Eyes were normal in appearance except for slightly increased size There was no sign of corneal opacity, but retinoscopy showed slight irregular corneal astigmatism There was myopia of approximately — 2 00 sphere. On Sept 27, 1944 (sixteen months after the operation), tension (McLean) was 29 mm, in the right eye and 20 mm in the left eye without miotics In June 1946 (three years after the operation) a letter from Texas reported patient's condition to be excellent to date

Cloudiness of the cornea also requires quick relief (1) because of the rapidity with which it interferes with the development of vision and (2) because the longer it exists the denser and more extensive will be the ensuing permanent scar. The present series shows that corneal cloudiness can be relieved and that in most cases formation of a permanent corneal opacity and development of amblyopia can be prevented in great measure by early diagnosis and prompt operation.

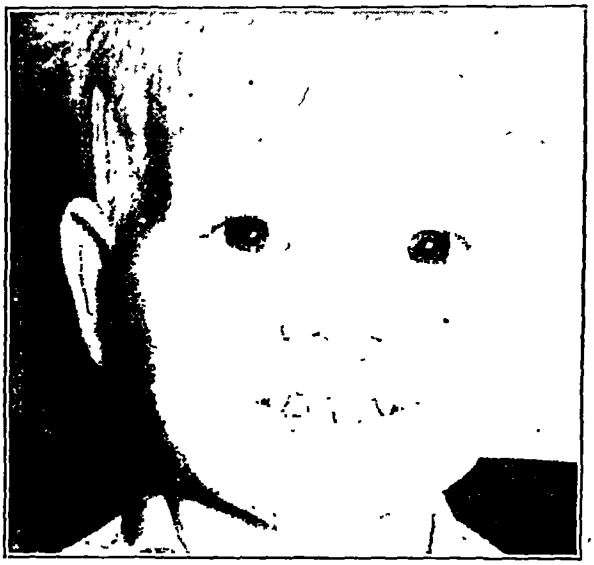


Fig. 8 (postoperative).—H. B., aged 7 months when first seen on June 28, 1939 Three months previously the cornea of the left eye had become cloudy. Tension in the right eye was 20 mm and in the left 90 mm. (McLean). Goniotomy was performed on the left eye on June 29, 1939. Drops of 5 per cent solution of prostigmine were instilled every three hours in both eyes On Aug 7, 1939, the tension (McLean) during ether anesthesia was 50 mm in the right eye and 31 mm. in the left. The cornea of the right eye was cloudy. Goniotomy was performed on the right eye. Three days after the operation the cornea of the right eye was clear. On Nov. 27, 1939, three months after the operation the tension (McLean) in the right eye was 22 mm and in the left was 22 mm without miotics. On Aug 12, 1942, when the patient was aged 3 years 9 months, vision of the right eye without correction was 0 5, and of the left was 1/200 When the patient was last seen, on June 12, 1946, when he was aged 7 years, 7 months, his condition was the same, and *the tension was normal The right eye was emmetropic, the left eye* myopic — 3 50 sphere The reduced vision of the left eye appeared to be due to amblyopia which developed during a transitory period of strabismus Binocular fixation was present.

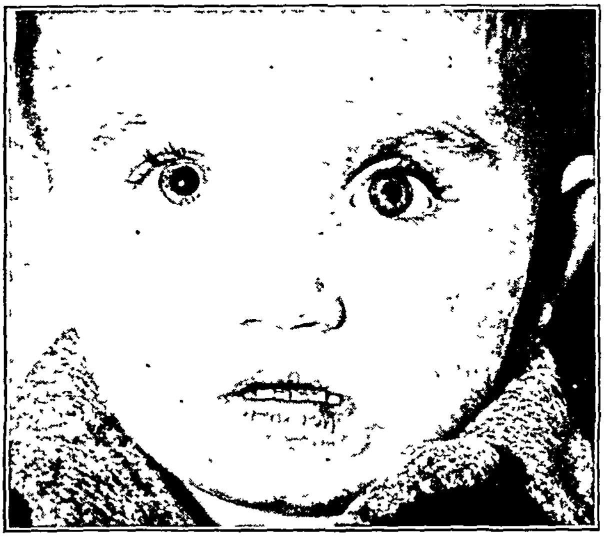


Fig 9 (postoperative) —B O'S, aged 4 years, first seen July 20, 1945 The left eye had been lost through trephine six months before The cornea of the right eye was clear, tension (McLean) with miotics was 70 mm Ophthalmoscopic examination showed glaucomatous excavation of the nerve head to the rim with slight pallor temporally. Vision was excellent, and visual fields were grossly normal Goniotomy on the right eye with the contact glass was performed on Oct 12, 1945 Three months afterward tension (McLean) in the right eye was 26 mm without miotics

2. *Permanent Scar.*—The cloudiness becomes a permanent scar. This "late" milky opacification develops from the original reversible congestive cloudiness of the

cornea when the latter has lasted sufficiently long to cause permanent damage to the corneal parenchyma. The prolonged distention per se may also be a factor in its formation, or both factors may be operating concurrently. This type is reversible in part only.. It involves chiefly the anterior layers of the corneal parenchyma. The epithelium shows normal to fair luster and does not stain with fluorescein sodium if the eye is in a noncongestive phase. There is, in certain of these cases, a relative absence of congestive symptoms because compensation has taken place. Pressure may actually be less than in the earlier stage, perhaps partially due to thinning of the tunics of the distended eye and possibly also to increased permeability of the occluding persistent meshwork in the angle resulting from stretching. The latter may be the mechanism, as has been suggested, which accounts for some of the rare cases of spontaneous arrest.

3. *Amblyopia.*—It is essential for the physician to keep in mind that a cloudy cornea during the first year of life, unless promptly relieved, retards the proper development of central vision at a most critical time.

The role of amblyopia is well illustrated by the case of J. McL., mentioned in a preceding paragraph, in whom normalization of tension by goniotomy at the age of 5 months resulted in considerable clearing of the cornea and in pronounced reduction of nystagmoid movements. In the case of H. B., aged 2 years, pressure in both eyes was normalized by goniotomy at the age of 7 months. One eye showed a slight residual permanent corneal opacity, as a result of which the eye became temporarily convergent at the age of 2. Some amblyopia resulted in this eye, since it was impossible to obtain the cooperation of the parents for adequate occlusion of the fellow eye. Vision with correction at the present time in the right eye is 5/10 and in the left 1/200. Binocular single vision has been maintained (fig. 8). These cases illustrate the susceptibility of the development of visual function to normal entry of light through the refractive media in the first year of life. They stress the urgency of prompt and adequate surgical intervention. They also show the need for diligent continued observation after pressure has been normalized, in order to detect beginning strabismus, which could rapidly induce amblyopia unless proper treatment with complete occlusion of the fellow eye is instituted.

4. *Glaucomatous Atrophy of the Optic Nerve.*—Glaucomatous atrophy of the optic nerve was the exception in this series. It occurred only in those few cases in which normalization of pressure was unduly delayed. In the case of B. O'S. (fig. 9), the patient did not come to operation until the age of 4½ years. The left eye had been lost due to atrophy following a trephine operation performed at the age of 4 years. The right eye carried a pressure of 50 mm. (McLean) while under the influence of miotics. It showed pronounced glaucomatous cupping of the nerve head to the rim. Because the cornea was clear excellent central vision had developed. This has been maintained since normalization of pressure by means of goniotomy performed one year ago. It is interesting to note, incidentally, that the excavation of the nerve head almost disappeared after normalization of pressure. In the case of B. P., who was first seen when 5 weeks old, repeated goniotomy and other operations were unsuccessful on 1 eye for two years; by the time the pressure was normalized optic atrophy had occurred. In the case of L. L., aged 3 years, bilateral trephination with total iridectomy had been performed at the age of 8 months without permanently reducing the tension. Cyclodiathermy also failed permanently to reduce tension. When the patient was 3 years old goniotomy was performed; pressure was normalized in both eyes, congestive symptoms which had persisted until this time were completely relieved and the corneas cleared considerably. Moderate reduction of vision was found to be due in part to faint corneal scarring with irregular astigmatism and in part to glaucomatous atrophy which had occurred as a result of the protracted period during which the pressure was increased. One may hope that early goniotomy will aid in relegating to the past the tragic sequelae of uncontrolled infantile glaucoma.

Ruptures or tears of Descemet's membrane, which are prominently referred to in the literature describing the pathologic anatomy of "buphthalmos," were absent in this series of infantile glaucoma. All patients were examined with a loupe and hand slit lamp and with the ophthalmoscope during ether anesthesia; some were also examined with the corneal microscope and hand slit lamp. Several were reexamined with the Gullstrand slit lamp in later years when they were old enough to cooperate. In my experience tears of Descemet's membrane in infantile glaucoma do not occur before pronounced distention and degenerative changes have taken place. These conditions did not exist at the time goniotomy was performed in this series, which probably accounts for the absence of tears. If this observation is correct, rupture of Descemet's membrane plays no role in diagnosis at the time when diagnosis is of therapeutic importance.

RESULTS

The results of goniotomy[5] in congenital glaucoma are summarized in the following table.

Goniotomy in Congenital Glaucoma

Number of infants and children	51
Eyes operated on by goniotomy	76
Successful (pressure normalized; vision maintained or restored)	66
Unsuccessful	10
Eyes in which goniotomy was not applicable	11

It has been my custom to prescribe miotics three times daily for two months after surgical intervention. The result of the operation was considered successful when intraocular pressure was never higher than 35 mm. of mercury with the McLean or 21 mm. with the Schiötz tonometer three months after operation, no miotics having been used during the two weeks preceding measurement of the pressure.

In the cases with successful result the time elapsed from the date of operation varied from six months to ten years. There were recurrences in 2 eyes, mentioned in the next paragraph. In the oldest case (2 eyes) the operation was done ten years ago; 5 eyes were operated on seven years ago; 8 eyes six years ago; 21 eyes from four to six years ago; 11 eyes from two to four years ago; 9 eyes from one to two years ago, and 10 eyes from three to twelve months ago.

---

[5] Goniotomy in infants and in adults are two distinct operations which differ in rationale, technic and effectivity. In infants the operation, which has been developed to a relatively satisfactory conclusion, consists of removing occluding fetal meshwork from the angle. In adults, in whom it has not yet shown an adequate degree of consistent efficacy to recommend its employment except in the occasional case, its objective is to incise the angle wall, that is the trabeculum itself. For this reason it is suggested that the term goniotomy be applied only to the operation performed on infants, and goniotrabeculotomy or trabeculotomy to the procedure carried out on adults.

The recurrence of increased pressure in 2 eyes was relieved by a further goniotomy in both instances. In F. W. pressure increased in the left eye eight years after operation. In J. McL. pressure increased in the left eye four years after operation. Gonioscopic examination showed that the stripping of the angle had been insufficient.

Repeated operations were necessary in 22 eyes before the pressure was permanently normalized. One operation sufficed in 45 eyes. In some cases, for example in that of P. O'Q. (fig. 1), goniotomy was performed four times on each eye before permanent normalization was attained. The ultimate result was excellent. I believe that it is better to err on the conservative side and partially strip the angle with safety on repeated occasions than to attempt to do an extensive stripping at one operation at the cost of greater hazard. Cases in which repeated operations were required before permanent normalization was attained are not listed as recurrences.

The operation was performed under the contact glass on 20 eyes. On 56 eyes the operation was performed without the contact glass because of corneal cloudiness.

In 8 eyes which had been ineffectively trephined goniotomy normalized tension.

Advantages of the operation are its relative lack of hazard, the absence of cosmetic disfigurement and preservation of a round central freely reacting pupil.

One of the disadvantages of the operation is the need of repetition in one third of the cases before permanent normalization of the tension is obtained. Another is that although the principle of the operation is simple its performance with consistent success requires a considerable degree of experience and highly trained assistance.

The hazards of the operation are excessive hemorrhage or iridodialysis if the root of the iris is incised. This hazard has been diminished by a preliminary deepening of the anterior chamber with isotonic solution of sodium chloride or air.[6] Infection, as in any other intraocular operation, is a possibility, but I have not encountered it. A severe reaction occurred in 1 case which could be considered an infective iritis. As always the operations on the eyes had been on different days, in this instance after an interval of three weeks. The condition cleared after eighteen days, leaving in one eye a small central opacity of the anterior capsule; in the other an anterior adhesion produced an eccentricity of the pupil. The tension was normalized, and it is evident that useful vision is developing. Sympathetic ophthalmia has occurred in no case up to the present time.

Before concluding I should like to state that my colleagues in San Francisco and in various parts of the country have referred these patients to me and that the Children's Hospital in San Francisco has been helpful in its cooperation.

CONCLUSIONS

Cloudy cornea and other congestive symptoms due to glaucoma are often present at birth. However, the onset of symptoms may not occur until the age of several weeks or months. In these cases, the onset is often rapid and may be even sudden. Occasionally, it is slow and manifests itself only by gradual enlargement of the eyeball and few or no signs of irritability. When the onset of increased pressure is rapid, congestion produces roughening of the epithelium which makes the eye unduly sensitive to light, causes epiphora and gives the cornea a cloudy appearance. At this time an incorrect diagnosis of conjunctivitis, keratitis or blepharitis is often made and valuable time may be lost. If the increased pressure is reduced by goniotomy soon after discovery of the condition, the symptoms can be relieved and the pressure in most cases permanently normalized with resulting useful vision and normal appearance. Even if the increased pressure and corneal cloudiness are allowed to persist for some months, operation may still normalize tension and relieve most of the cloudiness. However, the obstruction to development of central vision during a portion of the first year of the child's life and the residual scarring which usually persists may result in some degree of amblyopia. When normalization of pressure is further delayed, increasing distention and injury to the optic nerve add their quota to impending blindness.

SUMMARY

Congenital glaucoma in the past has resulted in a high percentage of blindness, due to lack of an adequate operation.

Goniotomy, performed at this writing on 76 eyes afflicted with infantile glaucoma, preserved useful vision in most cases. In 66 eyes pressure was normalized and vision maintained or restored over periods ranging from one to ten years. In 10 the operation was unsuccessful. When combined with early diagnosis it provided excellent visual results.

A plea is made for early diagnosis and prompt adequate operation by goniotomy.

The symptoms of increased intraocular pressure in congenital glaucoma may be present at birth, or their onset may be rapid or even sudden during the first few months of infancy. The symptoms consist of cloudy cornea, photophobia and other signs of irritation and congestion. Diagnosis should be made as soon as possible after onset of congestive symptoms and not deferred until enlargement of the eye is evident. Pressure should be measured with a tonometer with the patient under ether anesthesia which must be deep at the moment of measurement in order to avoid recording false values.

The appearance of congestive symptoms is prone to lead to a faulty diagnosis of blepharitis, conjunctivitis or keratitis, causing loss of valuable time and bearing tragic consequences.

The initial cloudiness of the cornea is associated with roughening of the corneal epithelium. This disturbance of the cornea is the chief cause of the irritative symptoms and photophobia which are further aggravated by exposure to air and light. If the corneal cloudiness is allowed to persist, it is superseded by permanent scarring with associated irregular astigmatism and ensuing amblyopia of greater or less degree.

Glaucomatous atrophy of the optic nerve was the exception in this series of infants and children. It occurred only in those few cases in which normalization of pressure was unduly delayed. In infants it is not

---

[6] Hughes, W. L., and Cole, J. G.: Technical Uses of Air in Ophthalmology, Arch. Ophth. 35: 525-540 (May) 1946. Barkan.[3]

nearly so urgent to protect the head of the optic nerve from pressure as it is to relieve cloudiness of the cornea.

If soon after its inception increased intraocular pressure is normalized by goniotomy, transparency of the cornea is almost completely restored and maintained, and vision is afforded the opportunity to develop. When this is borne in mind, the urgency of prompt relief of increased pressure is evident.

490 Post Street.

ABSTRACT OF DISCUSSION

Dr. Meyer Wiener, Coronado, Calif.: Dr. Barkan's method of incising the trabeculae so as to permit a flow of aqueous into *Schlemm's canal gives the best promise of favorable results* in congenital glaucoma. This is especially true if one is able to operate in the early stages before complete closure of the canal takes place. Dr. Barkan lays particular stress on corneal cloudiness as a clue to the early diagnosis of congenital glaucoma. *This must not be confused with rupture of Descemet's membrane due to pressure on the globe during delivery.* In this case, however, the cloudiness would not disappear during the day as in the cases of glaucoma. I wonder if Dr. Barkan has ever used a couple of small, bent hairpins to separate the lids instead of the ordinary lid retractors, which give a great deal more room and which I found to be more satisfactory in every way. An objection to real deep anesthesia in measuring the tension of infants is that the eyes diverge and rotate up, so that one cannot place the tonometer in the exact center of the cornea, which is essential for exact readings. I see no more objection to the local instillation of an anesthetic in the infant, combined with first stage anesthesia, than there would be in the adult. I question the statement that amblyopia is due to nonuse alone. I have seen a case in which the operation was done forty years after the development of the cataract, with resulting 20/20 vision. I have never seen a true glaucomatous, undermined cup disappear under any circumstances, and it is hard for me to conceive how it can occur, although I would hesitate to question the author's statement to this effect. I am glad that the author makes the distinction between goniotomy in the infant, which consists of removing the occluding fetal membrane from the angle, and goniotrabeculotomy in the adult, the object of which is to incise the angle wall—that is, the trabeculum itself. This would also answer the question put by *Dr. Allen as to whether the operation should be called goniotomy* or trabeculotomy. The results obtained by Dr. Barkan in his operations for congenital glaucoma are so far beyond those of any method heretofore used that one can safely predict that his method will be universally adopted for this type of glaucoma, *which, in my experience, gave less promise with the* methods available before than any other type of glaucoma. For the purpose of handling cases of congenital glaucoma alone, Dr. Barkan has made one of the outstanding contributions to ophthalmic surgery in modern times.

Dr. Dohrmann K. Pischel, San *Francisco: Dr. Barkan* gives us information on 88 eyes in 51 patients, all observed by him. Of these, 76 were operated on by him personally. Thirty-six of the cured eyes have had tension normalized for a period of over four years. While the time is too short to be certain that a final answer has been provided to this difficult problem of hydrophthalmia, the results shown us today should make us all hopeful that we are at last on the track of the correct solution. The general opinion is that the prognosis in this disease is poor. More or less complete blindness in the affected eyes has been the usual fate. Therefore, a large series of good results should give us hope that these patients can be helped if treated properly. There has been a general misunderstanding as to how the operation of goniotomy is performed today. It was first thought that an incision is made in the angle, a direct opening being made into Schlemm's canal. This is not the case. In these hydrophthalmic patients there is an embryologic rest of spongy tissue in the angle which prevents the aqueous from reaching and filtering through the trabeculum. This operation aims at stripping off or wiping off sufficient of this tissue to open enough of this angle to allow normal filtration. The two main points of the paper bear emphasis, the importance of early diagnosis and of early operation. Patients operated on in the first year seem to do best. I have had the opportunity of seeing several of the patients with whom Dr. Barkan has been successful, each with good, clear corneas.

Dr. Thomas D. Allen, Chicago: Dr. Barkan has done us a service in describing the early signs and symptoms of infantile glaucoma, and especially in emphasizing the fact that the intraocular tension *must be determined with the patient under deep* general anesthesia. Some years ago we were having difficulty in comparing the tensions of the patients in one room and in another. One of the assistants lay down on a bench; I took his tension, and then asked him to squeeze his eye. Meanwhile I held his lids open carefully so that there was absolutely no pressure on his eye, and the tension immediately went up some 20 points, from a perfectly normal reading to about 40. If this happens in adults, how much more likely is it to happen in a little baby? We all know the stage of excitement during the induction of general anesthesia. If the *gross muscles of* the body are in a state of spasm, one cannot be sure that the ocular and orbital muscles are relaxed. Deep anesthesia is necessary for intraocular tonometry in babies. I have occasionally attempted the same operative procedure, but have not had nearly as many cases as Dr. Barkan. My first difficulty came with the first patient on whom I attempted the operation —a blind girl with numerous elongated peripheral anterior synechiae, which I cut. Much bleeding followed from the capillaries in some of these synechiae. I should never have attempted it in such a case. My greatest objection to this operative procedure is that several operations are often necessary. Sometimes several operations are necessary in other types of surgery, too, but usually when other decompression operations are attempted, one operation suffices. I agree that the operation is seldom effective after the eyeball has been enlarged for some time. We so seldom see and recognize the situation before enlargement has taken place that possibly that is the reason *we have not had such great success as Dr. Barkan. One should* not attempt goniotomy without careful gonioscopy. Only by carefully studying our cases can we select the proper treatment. With careful operative technic, I feel sure that the average skilled surgeon will find this operation a great help in the pre*vention of blindness.*

Dr. Edward B. Shaw, San Francisco: Congenital glaucoma is infrequent in occurrence, but we are deeply grateful to Dr. Barkan for the education which he has given us on the importance of this subject. We were formerly content to feel that *this was an abnormality seldom seen and that if it was encountered* there was so little to do about it that the pediatrician need not be much concerned. Dr. Barkan's work has called to our attention the diagnostic features of this abnormality and has impressed on us the importance of prompt and adequate therapy. I suppose that in the past most of these patients have eventually come under the care of a good ophthalmologist, but I am fearful that many of them have been temporized with too long as having either infections or metabolic disturbances and that a considerable and regrettable loss of time has occurred. Now that we have been educated to the importance of this emergency and to the proper operative care I have been particularly impressed with the success of the end results. There *is in all of pediatrics no more delightful result than to see such* a patient after operation with good vision who had the prospect of neither seeing well nor of looking well.

Dr. Peter C. Kronfeld, Chicago: I should like to put myself on record as a recent convert to the idea of goniotomy as the specific operation for the type of *congenital glaucoma* in which a layer of embryonic tissue covers the anterior angle wall. This layer of embryonic tissue may be thin and on casual examination with the gonioscope may escape attention, but in most cases of congenital glaucoma such a layer is present. Again we have to ask ourselves the question: Is "goniotomy" the proper term for it? The way it is practiced now, it is a stripping of the trabecular area without any actual incision. I believe it will help matters if Dr. Barkan would describe the operation, exactly the way in which he does it now. It is clear to me that goniotomy as it is practiced now gives much better results than the iridencleisis. There are definite successes with iridencleisis, but the frequency of those successes is much lower than that in Dr. Barkan's series. I should also like to apologize to my colleague from Chicago, Dr. Allen, whose paper before the meeting of the American Ophthalmological Society in 1944 I had the pleasure of discussing. At that time Dr. Allen presented a case of hydrophthalmos which he had successfully treated with goniotomies. The gonioscopic picture in that case resembled that after a cyclodialysis, and in my discussion I erroneously arrived at the conclusion that Dr. Allen had cured that patient with a cyclodialysis which he had done by a rather devious route. I now believe that the principle of that operation was the principle of goniotomy—namely, the stripping of the trabeculum. A dissecting spatula introduced into the anterior chamber from an angle toward the front will accomplish such a stripping more easily and extensively than a dissecting spatula introduced from behind. Goniotomy represents a definite progress in the treatment of hydrophthalmos.

Dr. Otto Barkan, San Francisco: Dr. Wiener's suggestion of the hairpins appeals to me as a good one. Disappearance of a cup after normalization of pressure is mentioned in Anderson's book. There was one such case in this series. I use the contact glass if the cornea is transparent. It is a great comfort in cases of monocular patients to operate under the glass and be assured that one will not get a hemorrhage. All patients with transparent cornea reacted excellently to the operation under the glass and did not require repetition. I have tried air as an aid to goniotomy, but in the adult the loss of magnification is a handicap. How it will turn out in congenital glaucoma remains to be seen. I am obliged to Dr. Pischel for calling attention to the stripping of the angle and to Dr. Allen for his remarks on the technic of goniotomy. Dr. Kronfeld brought up the question of the name of the operation, "goniotomy." It is true that it is not an incision. In the first cases I did incise, but there are definite handicaps if one gets an adhesion of the root of the iris to the incision in the angle wall. I now use a rather dull-pointed knife with the intention not of making a counterpuncture, but merely of stripping the embryonic tissue from the angle wall. In none of these cases have I seen an internal dialysis except possibly in one. In adults it is true that the reduction of pressure following goniotrabeculotomy may be the result of an internal cyclodialysis. That is not the intention of the operation, however; the intention in adults is actually to incise the trabeculum. In infants the intention is to strip the angle of fetal tissue. I should also like to thank Dr. Shaw for bringing up the pediatrician's point of view, which is important because so many of these infants are first seen by the pediatrician, and he should be aware of the possibility of glaucoma.

Physostigmine.—No drug employed in the practice of ophthalmology offers such a fascinating story to the medical historian as physostigmine (eserine). By the irony of fate this substance, which was used as an ordeal poison by primitive peoples, later proved to be one of the most effective agents in therapy of the eye. The natural product from which the drug was derived is Physostigma venenosum (Balfour) or Calabar bean. After extensive experimentation and observation, the active principle physostigmine was isolated by Fraser in 1863 and made to serve a great variety of medical therapeutic needs. Foremost among these was oculotherapy, and at present eserine (physostigmine) maintains an unchallenged place as a miotic.—Rodin, Frank H.: Eserine: Its History in the Practice of Ophthalmology, *Am. J. Ophth.*, January 1947.

Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association
and Hygeia, the Health Magazine
Chicago

(Continued from page 475)

(Note.—*Following is the sixteenth chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of The Journal. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in The Journal. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—Ed.)

CHAPTER 16. *The Reorganization*

1900-1901

1900

ATLANTIC CITY

The year 1900 marked another turning point in the life of the American Medical Association; now came the transition from adolescence to adulthood. This was the beginning of the reorganization!

THE JOURNAL INDEX

The index published in 1899 attracted general attention, the only unfavorable criticism being that the book was now so bulky that there ought to be three volumes a year instead of two. This suggestion was adopted about forty years later. The editor suggested in reply to his correspondents that it might be well to bind the index separately.

In 1900 there were some articles reflecting the newer researches on malaria and the relationship of the mosquito to malarial infections. Bacteriology and parasitology were finding their place in medical science.

DEFENSE OF RESEARCH

At the meeting in 1898 a resolution had been introduced that a committee of five be appointed by the President at his leisure to cooperate with similar committees from other bodies to consider the desirability of formulating plans for the dissemination of knowledge of the value of experimental research in the progress of the science and art of medicine. The committee was appointed in 1900; it included Drs. H. C. Wood of Philadelphia, chairman; W. J. Mayo, Rochester, Minn.; F. H. Wiggin, New York City; J. F. Fulton, St. Paul, and C. A. Powers, Denver. This committee was to be the beginning of the work in defense of animal experimentation carried on so successfully by the American Medical Association since that date.

COMMITTEE ON SCIENTIFIC EXHIBIT

At the same time the President of the Association appointed a special committee to look after the Scientific Exhibit; this first committee included Drs. Joseph Stokes, Morristown, N. J., chairman; F. B. Wynn, Indianapolis, secretary; Alfred Stengel, Philadelphia, and W. W. Fox, Atlantic City.

PROPRIETARY MEDICINES

The interest in proprietary medicines had not died; the forthcoming meeting of the Pharmacopeial Convention stirred the editor of The Journal to a consideration of means by which editors could be guided in excluding from their advertising pages products which did not meet the standards of ethics of the medical and pharmaceutic sciences. "The difficulty," said the editorial, "has always been to know where to draw the line." A literal interpretation of professional ethics applied to the patronage and advertising of medicinal articles would exclude the vast majority of them. The editorial on proprietary medicines aroused correspondence indicating that the medical profession was ready for a movement toward scientific standards in the prescribing of remedies.

The announcement of the annual meeting was a reminder of the variety of representation in the Association. The scientific sections had now reached twelve, including

Practice of Medicine
Surgery and Anatomy
Obstetrics and Diseases of Women
Materia Medica, Pharmacy and Therapeutics
Ophthalmology
Laryngology and Otology
Diseases of Children
Physiology and Dietetics
Neurology and Medical Jurisprudence
Cutaneous Medicine and Surgery
State Medicine
Stomatology

There were many applications for places on the scientific programs. It became apparent that some means of restricting the total amount of material to be presented would have to be developed.

An article by P. Maxwell Foshay, editor of the *Cleveland Journal of Medicine*, was devoted to medical ethics and medical journals. He called attention to the multiplicity of such publications which lived primarily by the support of proprietary medicines. "The greed for advertising patronage," he said, "leads the editor only too often to prostitute his pen or his pages to the advertiser, so long as he can secure the coveted revenue. So our journals are filled with articles and editorials containing covert advertisements of this and that remedy." He indicated that many of the proprietary medical houses would not advertise without a promise of reading notices and original articles in support of their remedies. The medical professions were beginning to divide periodicals into honest and dishonest publications: Dr. Foshay urged physicians to patronize the honest periodicals and to write to the editors of dishonest ones asking them to stop sending such periodicals to physicians.

The campaign was on in earnest. In the issue of The Journal for April 21, 1900 appeared the first of a series of articles designed to correct the abuses from advertising and patronizing unscientific pharmaceutic preparations. The article appears without indicated authorship; apparently it had the full support of the editor of The Journal. The series included analyses and criticisms of such products as Castoria and Syrup of Figs. These contributions were fighting articles; they were the first shots in the campaign that would lead eventually to the establishment of the Council on Pharmacy and Chemistry of the American Medical Association and to the development of a real science of pharmacology and therapeutics. The repercussions from this series of articles were acute. Pressure began to be made on the Board of Trustees of the Association by representatives of pharmaceutic industries.

The convention was now so large that difficulties were developing in the House of Delegates because it could never be clear just who was a delegate and who was not. A distinctive badge was given to the delegates and an attempt was made to seat them separately in the conventioin hall, but it was clear that issues of importance were sometimes being settled by the mob rather than by the delegates.

Dr. G. Frank Lydston began a series of articles on medicine as a business which was full of invective and satire, for which he was later to become famous.

ADDRESS BY W. W. KEEN

In his presidential address Dr. W. W. Keen noted that the Association now had 9,000 members and that there were 100,000 regular physicians in the United States. The Journal had reached a subscription list of 15,000, exceeded only by the *British Medical Journal* with 21,000. Dr. Keen was high in his praise of the quality of The Journal. He was disappointed with the Rush monument fund because it had now reached only $11,000: too small to go ahead and too large to go backward. He was anxious to see improvement in the membership of the Association. He stimulated the Scientific Exhibit. He urged that the editor and the Board of Trustees be given authority to publish only the papers from the sections that seemed suitable. Most of his address was devoted to the necessity for endowment of medical schools so that they might more nearly fulfil their educational functions. As a final recommendation in his address he proposed the establishment by the American Medical Association of a fund for scientific grants in aid of research. This proposal bore fruit. By 1946 the American Medical Association had given more than $1,000,000 of its funds for such purposes and had set aside as a permanent fund for research more than $2,000,000 additional.

THE ATLANTIC CITY SESSION

More than 2,000 physicians attended the Atlantic City session. The committee on arrangements recognized the excessive number of papers on the programs of the sections and recommended some type of restriction. Dr. George H. Simmons, secretary of the Association, presented in an orderly manner the various communications which had been received by his office. The proceedings were conducted formally. General Sternberg of the U. S. Army spoke to the idea that there need no longer be an *Index Medicus* because many of the journals were now printing good indexes. There was a motion by Dr. Ludvig Hektoen of Chicago for the formation of a new section on pathology and bacteriology. Dr. Donald Maclean of Detroit moved that reports of the treasurer and all secretaries be printed in advance of the time of the session so that time need not be taken in reading them. The name of the Section on State Medicine was changed to the Section on Hygiene and Sanitary Science. It was pointed out that the responsibility for accepting and rejecting papers was fully covered in the By-Laws.

CLEANING THE ADVERTISEMENTS

Toward the end of the session a resolution was offered by Drs. A. A. Eshner and Solomon Solis-Cohen. It read:

> *Resolved,* That the steps taken by the editor and trustees of The Journal of the American Medical Association looking toward the fulfilment of the expressed will of the Association, excluding from its columns advertisements of nostrums and secret preparations, be cordially approved, and that the editor and trustees be encouraged to continue in this course until the work is completed.

CENSORING THE SCIENTIFIC PAPERS

At the final session of this meeting a furor arose over an action by Dr. Denslow Lewis of Chicago. He had read a paper in Columbus on a gynecologic consideration of the sexual act. This paper had been refused publication in The Journal although it was included in the Transactions of the Section on Obstetrics and Diseases of Women. Two members of the publication committee of the section had rejected the manuscript, stating that they did so on legal grounds. Denslow Lewis had secured opinions from five attorneys in Chicago and insisted that his paper be published. There was much discussion, in which parliamentary procedure was cited pro and con. The President finally ruled that the whole discussion was out of order, and the resolution was referred to a committee for further report.

On the next day the Lewis paper was again the subject of a bitter battle. The Denslow Lewis paper had been read by the trustees and by the executive committee and all agreed that it should not be published; then the Association voted not to publish the paper.

Thus with the 1900 session the Scientific Exhibit became fully established. The editor of The Journal in retrospect feared that there were going to be too many sections. Today the number has grown to twenty. It was recognized that the exhibit should include not only pathologic specimens but also apparatus and other materials. Indeed it was pointed out that the aim should be to unify and correlate the scientific work at the meetings. The editor suggested that perhaps the sessions on pathology could be short so that its members might participate in the work of the other sections.

1901

ST. PAUL

The year 1900 marked a new century and gave opportunity for The Journal of the American Medical Association to review the progress of medicine in the United States for a hundred years. This statement from the leading editorial is prophetic:

> While assured that American medicine in the twentieth century will take an active part in the advancement of medical sciences, the sociologic relations of medicine in this country offer problems of great importance. There is need above all things for a greater public faith in the teachings and the advice of the medical profession in matters relating to hygiene and to the prevention of disease. Hygiene should dictate to legislators and courts of law and not economic interests alone. "Unfortunately on the human race there still weighs that fate by which both preventable diseases and premature deaths, as well as duration of life itself, essentially depend on economic institutions." There is hope that the twentieth century may witness great improvements as knowledge is disseminated and the mass of the people learn to place confidence in medical teaching.
>
> The medical college in the coming century will have to give more attention to the quality than the quantity of its output, if present signs are not misleading. Human nature will not change; there will still be deceivers and their followers, but this will only accentuate the demand for higher qualifications in our profession. The future of science is not in doubt; the world will not stop in its progress nor lose what it has gained, but the future of the medical profession is in its own hands and can only be assured by its living up to its higher ideals.

The quality of The Journal improved with almost every issue in the style of its presentation and in the character of its editing. Yet the action that was to unite the vast majority of the American medical profession into a single, closely knit unit based on a truly democratic system of representation had not yet been taken. The minds of many leaders were concentrated on the project but the 1901 reorganization was to be the mechanism by which medical solidarity would be brought about.

Following the meeting of 1900 a committee on organization, consisting of J. N. McCormack of Bowling Green, Ky., P. Maxwell Foshay of Cleveland and George H. Simmons, Chicago, was asked to report on organization. The committee proposed that a business section should be constituted to be known as the House of Delegates which should proportionately represent the state societies, according to their numerical strength and with the direct representation of one delegate from each scientific section. It was suggested that the ratio of representation for the state societies be fixed at one delegate to every 500 members. This proposal when adopted finally made the House of Delegates truly representative of the membership of the American Medical Association. The committee pointed out that by the means of committees this House of Delegates could deal exhaustively with all the large problems of state medicine. It would afford opportunity to every state to be heard in full, and free debate would be permitted. The states near the place of meeting would no longer wield a preponderant influence. The House of Delegates could work without interfering with the scientific work of the Association.

The committee had endeavored to provide every possible safeguard for maintaining this new organization as truly representative of the medical profession. Provision had been made against political campaigns, against perpetuation in office and against self election to office.

The committee requested every member of the Association to read carefully the proposed amendments to the Constitution and By-Laws. It prophesied that if the Association would give sanction to its recommendations the profession throughout the country in five years would be welded into a compact organization whose power to influence medicine would be almost unlimited and whose requests for desirable legislation would everywhere be met with that respect which the politician has for organized votes.

In the extensive report the committee analyzed the previous difficulties of the Association and the necessity for reorganization. It was particularly commendatory of the committee on nominations. The report suggested a common plan of organization for each of the state societies and a technic for securing members in county and state organizations. Indeed it went on to suggest forms for organization of such societies and duties for the state organizer.

THE ST. PAUL MEETING

When the Association assembled in St. Paul, June 4-7, 1901 the President, Dr. Charles A. L. Reed, said that by custom the President's address was restricted to a discussion of the affairs of the Association. He found that they were in excellent condition but he was especially pleased because The Journal of the Association had increased its circulation to 22,000 copies per week. Much of the business improvement had been brought about by the fact that the Association was now incorporated. He suggested that the articles of incorporation be confirmed by the Association at the St. Paul meeting. Dr. Reed was disturbed by the fact that The Journal had a circulation twice the membership of the organization. He felt that attention should be given to the handling of the surplus funds and he mentioned the desirability of securing and properly maintaining research and expanding The Journal. The final portion of his address was devoted to the reorganization, and he recommended the adoption of the new Constitution and By-Laws in their entirety. He pointed out that the committee on reorganization had wisely avoided any attempt to discuss the Principles of Ethics, but he suggested the establishment of a special committee to give consideration to that problem.

As the session opened, Dr. J. R. Pennington of Chicago presented to the Association a portrait of the founder, Dr. N. S. Davis.

Dr. George H. Simmons, secretary, read a report indicating that the membership was over 10,600, the largest increase in any year in the history of the Association.

The general executive committee had been successful in reducing the total number of papers read from 491 to 391. The highest number had been read in 1898, when there were 615 papers listed for presentation. This vast accumulation of papers to be read by title or presented only by listing in the program finally forced the adoption of essential corrective measures.

The Board of Trustees was able to report continuous improvement in The Journal and also in its advertising standards. All medicines advertised in the newspapers had been refused space in The Journal. As a result some products formerly advertised only in the public press were now being advertised only to physicians.

At a previous meeting of the Association the Constitution and By-Laws had been amended to provide for a standing committee known as the Committee on National Legislation to be appointed annually by the President. This committee was able to defeat the obnoxious bill against animal experimentation in the District of Columbia. It had also been able to aid in securing second class postage rates for The Journal of the American Medical Association, making a total saving of about $30,000 in postage.

NATIONAL LEGISLATION

Attempts were under way to develop uniform medical legislation on the basis of a uniform medical education. The distinguished committee, which included Drs. H. L. E. Johnson, William H. Welch and William L. Rodman, recommended an annual conference in Washington of representatives of state legislative committees to consider general trends in both state and national legislation relating to the medical profession. Such a conference had been held in Washington in February of 1901 with a good representation from many of the states. They had been principally concerned with the army reorganization bill and with the duties of the Marine Hospital Service. They had also been concerned with perfecting an organization which would enable the national legislative committee to cooperate fully with the state committees.

The Rush monument fund had now reached $11,941.88.

A significant occurrence at this meeting of the Association was the presentation of Miss Susan B. Anthony, who spoke briefly on the subject of regulating vice in Manila, Hawaii and Porto Rico. She was readily seconded by Rev. Anna Shaw.

Following the address of the President, Dr. Charles A. L. Reed, the general executive committee, which acted as a reference committee for the session, urged the appointment of a committee of three to revise the Code of Ethics and with instructions to report at the next annual session of the Association. This was, however, laid on the table; apparently there was in the meeting a group which did not wish to have this question raised.

The Association voted a resolution of profound appreciation of the generous gift of John D. Rockefeller, who had given $200,000 for medical research, under the able chairmanship of William H. Welch.

The facts about the reorganization are so fundamental to the progress of the American Medical Association that I requested Dr. George H. Simmons to write the story. He prepared it in 1933, nine years after he had resigned as editor of The Journal. The article follows:

COMMITTEE CREATED

The annual meeting of the Association for 1900 was held in Atlantic City, June 6 to 10. At the second General Meeting the following resolutions, no preamble, were introduced by Dr. D. R. Brower, Chicago, a member of the General Executive Committee:

> *Resolved,* That a committee be appointed by the Association on the organization of the profession throughout the United States to cooperate with the Committee on National Legislation; this committee to consist of one member from each state and territory represented in the Association.
>
> *Resolved,* That a committee of three be appointed by the President to prepare plans in detail for such committee on organization; to enter into correspondence with officers of the various state societies, and to take such action in the premises as it may think advisable, and that the Trustees be requested to appropriate a sum not exceeding $150 for the necessary expenses of the committee.

According to the usual procedure, the resolutions were referred to the General Executive Committee. The following day they were referred back with recommendations for adoption. By motion, a representative was added to the large committee—referred to hereafter as the States' Committee—from the Medical Department of the Army, of the Navy, of the Marine Hospital Service and from the Bureau of Animal Industry, respectively.

The Committee on National Legislation, mentioned in the first resolution, was a standing committee on national—congressional—legislation and would not be concerned with the subject matter in the slightest degree.

There were two purposes in view in creating the States' Committee. First, to represent the state and territorial associations, each of which would be asked to appoint a member. Any plan of organization to include the whole country would require the approval, and cooperation in carrying it out, of all the state organizations. This cooperation would be absolutely essential to a successful outcome: hence the main reason for the States' Committee.

Second, the States' Committee would make a large and representative group to which the Committee on Reorganization would make its report, in the first instance at least, rather than to a General Meeting. It proved an ideal arrangement.

COMMITTEE APPOINTED

The Committee on Reorganization was appointed by the newly elected President, Dr. C. A. L. Reed, and consisted of Dr. W. W. Keen, Philadelphia, the retiring President; Dr. J. N. McCormack, Bowling Green, executive officer of the Kentucky State Board of Health, and Dr. George H. Simmons, Chicago. Presumably Dr. Keen was appointed because of his great popularity (he was loved by all who knew him); his membership on the committee therefore would add confidence in it and its work. He later resigned (the committee was not yet organized) because his professional work made it impossible for him to give to the committee the time and attention required. Dr. P. Maxwell Foshay, Cleveland, secretary of the Ohio State Medical Association, was appointed in his place. As now constituted, each member of the small committee was, or had been, officially connected with a state medical association.

FIRST MEETING OF THE COMMITTEE ON REORGANIZATION

The first meeting of the committee was held in Chicago in October (1900) and organized by electing Dr. J. N. McCormack chairman and Dr. George H. Simmons secretary. It was in session two days, during which it outlined the whole scheme of organization which it proposed to recommend and left the working out of the details to future meetings and to correspondence.

In addition to two or three meetings in Chicago, the committee, after the plan of reorganization had been pretty thoroughly worked out, held one meeting in Cincinnati, one in St. Louis and one in Chicago; to these meetings local men who might be interested were invited for conference. These conference meetings were helpful in many ways. A brief statement on some of the subjects the committee had to consider may be of interest.

PLAN OF ORGANIZATION

The general plan of organization was, of course, the first matter taken up by the committee. The following is an outline of the plan tentatively adopted at its first meeting:

The unit of the organization to be the local society, preferably the county; membership in the county society to carry with it membership in the state association; the state association to create a legislative body or branch to be composed of delegates elected by the component (county) societies. The American Medical Association likewise would create a legislative body, its members to be elected by the legislative bodies of the state associations and one by each of the sections; also appointed representatives of the government services. There was nothing unique—nothing original—in the general scheme; it was in use in its essentials by national, religious and social organizations, by fraternal and secret societies, and, at that time, by the United States Senate. There was no other plan on which the medical profession of the United States could be organized if it was to represent the profession of the whole country.

The Unit.—What shall constitute the unit of the organization? Naturally, the ideal would be the county. But in thinly populated states there were counties without a sufficient number of physicians to constitute a society. This problem could be solved by providing for component multiple county societies.

The opposite condition would be a county containing a large city, so large, geographically and in population, that one component society would not meet the required conditions. Boston, New York, Philadelphia and Chicago were considered.

Massachusetts has its districts, not counties; Boston included two of such districts, each with its district society.

New York City covered four counties: four component societies would be satisfactory; Philadelphia was geographically small and one component society would probably be satisfactory.

Chicago (Cook County) was a more difficult problem. Cook County is large geographically and even then was thickly populated. The committee recommended that subdivision of such counties should be made.[1]

Maximum Number of Members in House of Delegates.—This should be sufficiently large to make proportional representation for the thickly populated states, but no larger. Investigation showed that, based on the proportion of one delegate to each 500 members of a constituent association, plus one representative from each of the sections and from each of the three government services, would make the House consist of about 145 members. This would give proportional representation. One hundred and fifty as a maximum was recommended and adopted.

Presiding Officer for the House of Delegates.—It was the unanimous opinion of the committee that the House of Delegates should have its own chairman, one who would be selected for his ability to preside rather than for his scientific achievements or popularity. The office should be more or less permanent; the one selected would be more likely to master parliamentary rules than would be the case if one had to preside for one year only. Then there are certain lines of business that are more or less continuous, and the presiding officer should have knowledge of such matters.

However, while the committee had not changed its views, it concluded that the question was a delicate one and might well be left to the members of the House to decide for themselves.

While acting on the rule it had adopted, that is, to make only such modifications of the By-Laws as were absolutely necessary for working out the essentials of the plan, it is probable that the committee carried this policy too far in some matters, possibly in this.[2] For instance, the paragraph in the old constitution on "Permanent Members" was retained although it had no meaning in the new. The articles on "Funds" was left intact, one clause of which read "an equal assessment of not more than ten dollars annually on each of the permanent members." The "ten dollars" caused vigorous objections in the States' Committee Conference until it was explained that it had been in the old constitution for as long as the records ran. Even "four vice presidents" were still provided for; it so remained until 1920, when the By-Law was changed to provide for one vice president. The By-Laws also contained incongruities because of the decision to make only such changes as were absolutely essential. As was expected, these incongruities were eliminated as the years passed.

THE REPORTS

The preparation of the preliminary report was allotted to Drs. J. N. McCormack and G. H. Simmons; to Dr. Foshay was assigned the task of suggesting the necessary modifications that should be made in the By-Laws. This separate work was done between meetings, but all matters were later thoroughly discussed by the committee in session. There were two reports: (1) the preliminary report and (2) the official report.

The former was the more important and consisted of two parts, an explanatory preface or introduction, and the "argument."

The preface fully outlined the changes proposed and specifically detailed the more important ones. It was a summary such as would give one a clear idea of what changes were proposed and the results expected, if and when this proposed reorganization became a fact.

---

[1] After reorganization a special committee recommended that the Chicago (Cook County) Medical Society should be a Councilor District; that each branch should be a component unit of the state association. This plan was successfully carried out, with this important exception: as component societies, each branch would be entitled to send representatives to the House of Delegates of the state society. This right the branches do not have. The delegates of the state body are elected by the Council (the business body) of the Chicago Medical Society. This arrangement is perfect for the latter but not for the state society.

[2] In a few years a feeling had developed that a permanent presiding officer was desirable. Dr. Happel, then chairman of the Board of Trustees, introduced an amendment to the By-Laws to provide for a chairman for the House of Delegates. It caused resentment, and the chairman of the Board of Trustees was hissed; the proposal was regarded as an insult to the President of the Association, then presiding. It was not until 1916 that a By-Law was passed creating the office of chairman of the House of Delegates. Dr. Hubert Work was elected to the office. In 1918 the word "chairman" was changed to "speaker." Dr. Work resigned in 1920 and became President. He was succeeded by Dr. Dwight Murray, New York, who presided one year (1921) and was reelected but died the following October. Dr. Frederick C. Warnshuis was elected speaker in 1922 and has been reelected each year since.

The "argument" was an exhaustive review of the conditions in the Association, past and present, that made reorganization necessary; it outlined the benefits that would result from such a reorganization as recommended.

The preliminary report in pamphlet form occupied forty-eight pages, six of which were required by the introductory preface. The official report was submitted first to the States' Committee Conference and later presented to the General Meeting of the Association; with it was submitted the revised Constitution and By-Laws

PRELIMINARY REPORT DISTRIBUTED

The Preliminary Report was complete and in form for distribution in April 1901. A copy was sent to each member of the States' Committee, with a special typewritten letter asking for criticisms and suggestions. Included in the letter was a call for the conference to be held in St. Paul, June 3. Also with a similar letter copies were sent to the president of each state and territorial association, to the members of the General Executive Committee, to officers of the Association and to about 400 physicians located in various parts of the country, selected as far as possible from physicians known to be interested in the welfare of the Association. In all letters a request was made for criticisms and comments. A stamped return addressed envelop was an enclosure; also an invitation to attend the States' Committee Conference. Altogether, *approximately, 500 letters were sent.*

The number of replies received indicated a decided interest in the subject; as I recall, approximately 80 per cent acknowledged receipt of the preliminary report. Before me is a bundle of about 100 of these letters. A few are little more than an acknowledgment of receipt of the preliminary report; some are long: one written in long hand takes ten large letter-size sheets; the longest, however, consists of seven such sheets, typewritten, single space and small type face—a size common at that time.

The general tone of each of these and of a few other letters is a fear of what would happen if the plan proposed was adopted Practically all contain constructive criticisms and suggestions, many of which were adopted A comparison of the recommendations in the preliminary report with the Constitution and By-Laws as submitted and finally adopted will show this. The number of letters that may be regarded as absolutely opposed is small and practically without exception are from the older, faithful members—"wheel-horses," using the term in its best sense—of the Association.

One letter I quote—not that it indicates definite opposition, but because it is from the "Father of the Association," a man who did more than any other to improve conditions and to bring about reforms.

Chicago, Ill, May 8, 1901
65 Randolph Street

To George H. Simmons, M D

Dear Doctor —On referring to the report that I made as chairman of a committee on revision of the Constitution of the American Medical Association *in 1887, and the action thereon* by the Association at the meetings in 1887-88 89, I find that *all* of the *amendments* both to the Constitution and to the By Laws that were recommended in my report were fully considered and *adopted,* except that *one* relating to the formation of a general committee of two members from each state, territory, Army Navy and Marine Hospital Service to take the place of the nominating committee and serve as a permanent general committee, which was finally fully discussed and *rejected* at the meeting at Newport, 1889 And I still think if such a *council* or *standing general committee* as proposed in that report of 1887 was adopted to take the place of both the *present business committee* and the nominating committee, it would be more simple and efficient than the scheme outlined in the report you sent to me.

Yours truly,
N. S Davis

The report Dr. Davis mentions is the one to which reference was made to the effect that had it been adopted it would have made unnecessary *the radical reorganization proposed.*

The preliminary report was given its greatest publicity when it was published in The Journal of the American Medical Association, May 25, 1901.

THE STATES' COMMITTEE CONFERENCE

The States' Committee met at St. Paul, June 3, 1901, to act on the recommendations of the Committee on Reorganization, and on the revised Constitution and By-Laws. The conference was a large and representative gathering. Two sessions, morning and afternoon, were held.

The conference was called to order by Dr. J. N. McCormack, chairman of the Committee on Reorganization. Dr. H. O. Walker, Michigan, was elected chairman and Dr. George N. Kreider, *Illinois,* secretary.

As all had received a copy of the preliminary report, they knew the subject to be acted on by the conference. The pamphlet containing the official report and the revised Constitution and By-Laws was distributed. The official report was then read, and *the meeting* took up, section by section, the revised Constitution and By-Laws. Three or four minor modifications were made, but there was one which could not be regarded as "minor." As has already been stated, the committee recommended that each section should be entitled to one delegate; the conference changed this to two delegates. The idea that the sections still constituted the American Medical Association remained in the minds of the majority. Two years later the By-Laws was changed back to the number recommended by the committee, one delegate from each section.

No organic laws were ever more carefully scrutinized than were the Constitution and By-Laws of the American Medical Association passed on at this conference.[3]

REPORT PRESENTED TO THE GENERAL MEETING

The next morning the following official report was presented to the General Meeting by Dr. J. N. McCormack:

"Officers and Members of the American Medical Association:

"We, your Committee on Reorganization, respectfully submit *the following:*

"We have keenly felt from the first the magnitude of the task set for us, but in all the months of exacting labor we have been spurred on by the hope that our work would, if wisely performed, and if accepted by you, mark the dawn of a new era in the history of American medicine. After full consideration of the problems before us we early reached the conclusion that it would be useless at this late date to suggest the adoption of either half-way or compromise measures, and, therefore, we have prepared and now submit a completely revised Constitution and By-Laws designed to federate all the state organizations into this Association, to foster scientific medicine and to make the medical profession a power in the social and political life of the republic.

"In a recent issue of The Journal we submitted for your consideration a full outline of the changes proposed and, in an exhaustive manner, presented the reasons for our recommendations. We earnestly request that every member of the Association, before passing judgment, carefully consider all the facts and *arguments presented.* Such *examination will* make it clear that we have been conservative, suggesting only such changes in the organic laws as are essential to the accomplishment of the high purpose for which the Association was organized.

---

[3] The official copy of the pamphlet containing the Constitution and By Laws, in which were written the modifications made during the conference, has written on its title page "Original Copy of Report as handed in by Dr. Walker, Chairman Joint Committee—Wm. Whitford" (Whitford was for many years official reporter to the American Medical Association) Attached to this pamphlet is a sheet bearing the signature of members *of the States' Committee. It is headed* "We the undersigned have examined, and hereby endorse and approve of the above revised Constitution for the American Medical Association." The following are the signatures.

W. G. Harrison, Alabama
Gould A Shelton, Connecticut
W. N Fisher, District of Columbia
John Palmer Jr., Delaware
W. W. Grant, Colorado
A W. Alvord, Michigan
Henry O Marcy, Massachusetts
Henry D. Didama, New York
George Cook, New Hampshire
Philip Marvel, New Jersey
George N. Kreider, Illinois
G. W. McCaskey, Indiana
R. E Conniff, Iowa
J. A Crook, Tennessee
A H Thayer, West Virginia
J. W. Aird, Utah
George Tully Vaughan, Marine Hospital Service
H M. McClanahan, Nebraska
A *Garcelon, Maine*
R. Harvey Reed, Wyoming
J. H. Pritchard, Wisconsin
J. D Griffith, Missouri
W. J Means, Ohio
Charles Richard, U. S Army
Joseph M. Mathews, Kentucky
J A. Dibrell, Arkansas
John L. Wills, California
J. L Catterson, Washington
John A Wyeth, New York
G R Dean, North Carolina

"It will be seen that we have left the Code of Ethics, based on the original resolution of adoption, undisturbed and still in force. We have carefully preserved the membership of all those now in the Association and have jealously guarded the rights and privileges of each state organization now in affiliation with this body.

"In accordance with your instructions we have also submitted to the larger committee, composed of one member from each state, a detailed scheme for the organization or reorganization of state and county societies, in harmony with, and in completion of the general plan, in which we ask your concurrence.

"The various portions of the scheme of organization proposed are interdependent and should be permitted to stand or fall together. During the time devoted to the preparation of the report, we have considered the various questions in detail and have rejected many propositions that we at first thought worthy of adoption, so that we feel that no amendment can be proposed from the floor which has not already been fully considered. We appreciate the fact that some of the details proposed are to a certain extent experimental, and their true value can only be determined by the test of experience.

"As all the changes outlined, and the reasons for them, have been fully placed before you, no discussion of any part of them will be attempted here, the Constitution and By-Laws clear and distinct in every provision, being submitted as our unanimous report.

"Respectfully,
"J. N. MCCORMACK.
"P. MAXWELL FOSHAY.
"GEORGE H. SIMMONS.
"COMMITTEE ON REORGANIZATION."

It was at once referred to a joint committee composed of the General Executive Committee and the States' Committee. (This action was following the usual custom although it was referring the matter back to the same group who had acted on it the day before.) The next day this joint committee reported to the General Meeting recommending the adoption of the report of the Committee on Reorganization and the revised Constitution and By-Laws. The report was adopted, with practically no discussion, and the new order went into effect on the adjournment of the St. Paul meeting.

As this was only the first step in the reorganization, the Committee on Reorganization was ordered to continue its work to a full completion of the scheme.

"It is interesting to note that this radical change in the organic laws of the American Medical Association was made without being subjected to a discussion—worthy of the name—in a General Meeting. There was no reason, of course, for a discussion; the whole matter had been thoroughly gone over by a group which the General Meeting regarded as competent to advise. Further, those who were in the States' Committee Conference constituted a goodly portion of the members present at the General Meeting, at which the foregoing action was taken.

• • • • • • •

What happened when the General Meeting—the supreme legislative body of the Association—adopted the Report of the Committee on Reorganization and approved the Constitution and By-Laws suggested by the committee and endorsed by the States' Committee? By this action the General Meeting surrendered its legislative functions to the newly created House of Delegates; also its claim to be the representative body of the medical profession of the United States—in a word, the old organization, in its completeness, went out of existence. As Dr. J. N. McCormack put it, "It will therefore be seen that historically the House of Delegates is the legitimate successor and direct outgrowth of the delegated body known as the American Medical Association."

But the annual meeting of the American Medical Association was held the following year (Saratoga, N. Y., June 10-13, 1902) apparently the same as before; there was the usual Opening General Meeting with the same formalities of welcoming addresses and responses, followed by the usual presidential address; likewise the other General Meetings were held as usual, at which the orations on surgery, medicine and so on were delivered. Yet there was a difference; there was no business transacted at the General Meetings. That was the only change. This was pleasing to those whose interest was chiefly in scientific medicine. On the other hand, there were some—particularly among the older members—who regretted the innovation.

Exactly as in former years the sections met day by day and carried out their respective programs. The only reminder of a change that the members might notice was that each section was required to elect a representative to the House of Delegates.

There was a change in the registration bureau. No new members were registered as delegates from "Affiliated Societies." Those who became members (Fellows of the Scientific Assembly) that year, and thereafter, did so under the old formula, "Members by Application."

Thus it will be seen that while, as Dr. McCormack said, the House of Delegates succeeded "the delegated body known as 'the American Medical Association,' the Association, as a scientific body, continued to exist and to function essentially as before; it so continues as that branch of the Association known as 'the Scientific Assembly of the American Medical Association. . . .'"

(To be continued)

Clinical Notes, Suggestions and New Instruments

STREPTOMYCIN THERAPY IN PYLETHROMBOPHLEBITIS

J. H. WISHART, M.D.
and
L. J. PETERSON, M.D.
Minneapolis

Pylephlebitis is a thrombophlebitis involving the venous channels of the portal system. Subsequent development of multiple abscesses of the liver results from septic emboli or from progression of the inflammatory process. The mortality rate is extremely high. Acute suppurative appendicitis is the most frequent antecedent lesion, and it is this association with which we are concerned in the present paper.

Ochsner, DeBakey and Murray,[1] in a review of the literature, pointed out that the first report of appendicitis complicated by multiple abscesses of the liver is generally conceded to Waller, quoted by Laison.[2] Other early reports include that of Reginald Fitz[3] in his classic contribution in 1886.

The incidence of portal thrombophlebitis and hepatic abscess following appendicitis varies from 0.10 per cent to 0.50 per cent. In Ochsner's[1] series of 5,293 cases of acute appendicitis during the ten year period 1928 to 1937, inclusive, there were 5 cases complicated by abscess of the liver, an incidence of 0.09 per cent. He cited also a collected series of 68,198 cases of appendicitis in which there were 247 cases with these complications, an incidence of 0.36 per cent. Petrén[4] stated that abscess of the liver or suppurative pylephlebitis of the portal vein occurred in from 0.3 to 0.4 per cent of all cases of appendicitis, and that these complications occur in at least 5 per cent of all fatal cases of appendicitis. Hawkes[5] reported 1,463 cases of appendicitis with 12 cases of pylephlebitis over a ten year period, or an incidence of 0.82 per cent.

Pylephlebitis is usually a complication of a severe inflammation of the appendix, most frequently gangrenous. The organisms most frequently involved are streptococci, Escherichia

---

From the Veterans Administration Hospital, Minneapolis, and the Departments of Medicine and Surgery, University of Minnesota.

Published with permission of the Medical Director, Veterans Administration, who assumed no responsibility for the opinions expressed or conclusions drawn by the authors.

[1] Ochsner, A.; DeBakey, M., and Murray, S.: Pyogenic Abscess of the Liver: II. An Analysis of Forty Seven Cases with a Review of the Literature, Am. J. Surg. **40**: 292, 1938; correction, ibid. **40**: 504, 1938.

[2] Waller, cited by Laison, E.: Des *suppurations* intra et périhépatique d'origine typhloappendiculare, Rev. de chir. **21**: 522, 1900.

[3] Fitz, R. H.: Perforating *Inflammations* of the Vermiform Appendix, Am. J. M. Sc. **92**: 321, 1886.

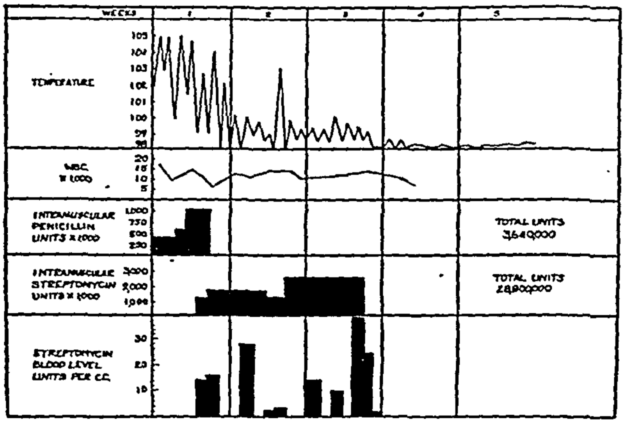
[4] Petrén, G.: Ueber Leberabscesse als Komplikation zu akuter Appendicitis, Beitr. z. klin. Chir. **94**: 225, 1914.

[5] Hawkes, S. L.: *Thrombophlebitis* of Appendical Vein Complicating Acute Appendicitis, Surg., Gynec. & Obst. **66**: 62, 1938.

coli and staphylococci, or a combination of these. A thrombophlebitis of the intramural vessels of the appendix occurs, and this may progress to involve the appendical veins in the mesoappendix, thence to the ileocolic, superior mesenteric and portal veins. In other instances small septic emboli may become detached from a thrombus localized in the vessels near the involved appendix and reach the liver through the venous radicles of the portal system. Thus multiple hepatic abscesses may develop.

The symptoms of phlebitis complicating acute suppurative appendicitis are those of the antecedent appendicitis followed by the sudden onset of chills and an accompanying high fever out of proportion to that anticipated from the local inflammatory lesion in the appendix. The elevation of temperature may spike sharply with the chills, and profuse sweating may occur. Other symptoms of pylephlebitis with hepatic abscesses include abdominal pain, anorexia, malaise, asthenia and loss of weight. Jaundice may appear as a late manifestation. Ascites occurs in some cases. The leukocytosis in pylephlebitis is usually well defined with a relative increase in the polymorphonuclear cells. Blood cultures are most frequently negative.

Surgical treatment of pylephlebitis consists in ligation of the involved veins above the level of the thrombosis to prevent septic emboli from reaching the liver. Wilms[6] in 1909 advised ligation of the veins at the ileocecal angle and reported a successful case. Subsequently, numerous investigators have cited cases of the disease treated by ligation of veins at various levels. Hawkes[5] in 1938 recommended ligation of the ileocolic vein at the point where it joins the ascending colic vein. He cited 24 instances with ligation at various levels with 8 deaths, or a 33 per cent mortality rate.



Summary of data in case of pylethrombophlebitis.

Chemotherapy has been used successfully in the treatment of pylephlebitis associated with acute appendicitis. In 1938 Ottenberg and Berck[7] reported 2 cases of the disease treated with sulfanilamide with subsequent recovery. Murray and Donelson[8] have reported a case in which treatment with sulfathiazole resulted in cure. These authors considered significant the fact that the infection did not progress to suppuration following chemotherapy.

Antibiotic therapy has been used recently with success. Gamm[9] in 1945 treated a case of pylephlebitis with penicillin, and the patient recovered completely. Wilensky[10] in 1945 used large doses of penicillin and sulfadiazine in treating a case of pylephlebitis associated with acute suppurative appendicitis. Recovery ensued.

The course of pylephlebitis with the development of hepatic abscesses is usually decidedly protracted. Data on cases of the disease with multiple abscesses of the liver show an exceedingly high mortality rate. Surgical drainage is advisable when a solitary accessible lesion can be demonstrated. Cures resulting from chemotherapy have in many instances had a lengthy course because of the development of hepatic abscesses. When involvement of the liver can be prevented, one may hope for an early recovery.

REPORT OF CASE

History of Present Illness.—A white man aged 28 was admitted to the hospital at 11:30 p. m. July 30, 1946. The onset of the present illness was July 28, two days prior to admission, with a history of generalized cramping abdominal pain, recurrent chills and fever and headache. These symptoms were attended with nausea but not with vomiting or diarrhea. On one occasion he manually forced himself to vomit in an attempt to relieve the pain, which was severe enough to keep him awake most of the day and night. Two days after the onset of symptoms, the diffuse abdominal pain gradually localized in the right lower quadrant, and changed in character from an intermittent cramping pain to an almost steady, severe pain. The patient stated that on the day prior to admission his temperature was 99.6 F. On the morning of the day of admission his temperature was 102 F., and he had a frank chill in the afternoon and another in the evening. His temperature reached 105 F. during the latter episode. He then called his family physician, who sent him into the hospital.

Past Medical History.—The patient had spent seven months in the Philippines in military service. This tour of duty terminated in February, 1946 with no history of tropical disease or other serious illnesses. Systemic review revealed essentially normal conditions. There was no history of rheumatic fever. He had had the usual childhood diseases. His present occupation was that of a bottler in a brewery.

Physical Examination.—On admission to the hospital the patient weighed 135 pounds (61.2 Kg.) and appeared acutely ill. He was perspiring profusely and complained of severe abdominal pain. His temperature was 102 F., his respiratory rate 28 and his pulse rate 86. Examination of his head, eyes, ears, nose and throat revealed essentially normal conditions.

Chest: His chest showed equal excursion and expansion. Neither rales nor evidence of impaired resonance was evident on auscultation. The heart was not enlarged to percussion. The blood pressure was 134 systolic and 84 diastolic. The rhythm was regular; the heart tones were of good quality and equal intensity; murmurs were not heard.

Abdomen: The abdomen was scaphoid in type and not distended. There was pronounced tenderness to deep palpation in the right lower quadrant with associated spasm of the right rectus abdominis muscle. The liver and spleen were not palpable. There was no tenderness to percussion over either costovertebral angle posteriorly. Rectal examination revealed decided tenderness high on the right side. There was no evidence of petechiae. The lymph nodes were not enlarged. Neurologic examination was noncontributory.

Laboratory Data.—*Examination of the Blood*: The total white blood cell count was 15,600 with a differential count of polymorphonuclear leukocytes 87 per cent, lymphocytes 8 per cent and monocytes 5 per cent. Urinalysis: The urine was straw colored, the specific gravity was 1.025, and the albumin, sugar and microscopic tests were negative. Malaria Smears: Parasites were not found in malaria smears. Stool examinations were negative for ova and parasites.

On the basis of the preceding history, physical examination and laboratory data, a diagnosis of acute appendicitis was made.

Hospital Course.—The patient was operated on two hours subsequent to admission. The abdomen was opened through a McBurney type muscle-splitting incision. Free fluid was not encountered. The appendix was found lying retrocecally with considerable thickening and edema of the surrounding tissues. The appendix was congested and covered with a fibrinous exudate. Because of its retrocecal position and highly inflammatory state, the appendix was removed in a retrograde manner. The stump was not inverted; the abdominal cavity was

---

6. Wilms: *Venenunterbindung bei eitriger Pfortaderthrombose nach Appendicitis*, Zentralbl. f. Chir. **36**: 1041, 1909.

7. Ottenberg, R., and Berck, M.: Sulfanilamide Therapy for Pylephlebitis and Liver Abscesses, J. A. M. A. **111**: 1374 (Oct. 8) 1938.

8. Murray, S. D., and Donelson, M.: Pylephlebitis and Hepatitis Following Appendectomy, U. S. Nav. M. Bull. **45**: 1163 (Dec.) 1945.

9. Gamm, K. E.: Penicillin Therapy in Pylephlebitis, J. A. M. A. **128**: 1159 (Aug. 18) 1945.

10. Wilensky, A. O.: Pylephlebitis Under Penicillin and Sulfadiazine Therapy, New York State J. Med. **45**: 2082 (Oct. 1) 1945.

not drained. The abdomen was closed in layers with interrupted silk sutures.

The postoperative clinical course was unchanged from that preoperatively. The spiking high fever with recurring chills continued with temperature elevations to 105 F. daily (see the accompanying chart). Repeated blood smears were negative for malaria organisms. Penicillin therapy was instituted on the day following surgical intervention, 40,000 units being administered intramuscularly every three hours. The dosage of penicillin was increased to 50,000 units every two hours and finally to 100,000 units every two hours without apparent effect on the clinical course. Penicillin therapy was discontinued on the fifth day postoperatively.

Blood cultures were taken on the first, second, third and twelfth days after the surgical operation. The second and third blood cultures were positive for hemolytic Staphylococcus aureus which were coagulase positive. This organism was sensitive to 0.02 unit of streptomycin per cubic centimeter and 0.1 unit of penicillin per cubic centimeter. Inasmuch as these two blood cultures were taken while the patient was receiving large doses of penicillin (the organism hemolytic Staph. aureus being sensitive to 0.1 unit of penicillin per cubic centimeter), and since the pour plates were negative, it is possible that the organisms recovered on these two occasions were contaminants. The other two blood cultures were negative. On the basis of the postoperative clinical course and the laboratory observations, a diagnosis of pylethrombophlebitis was made, and streptomycin was considered the drug of choice.

On the third day postoperatively the lower end of the incision was opened and approximately 3 ounces (85 cc.) of purulent material was evacuated from a subcutaneous wound abscess. Culture of this exudate revealed Esch. coli. A streptomycin sensitivity test revealed that the Esch. coli was sensitive to 1 unit of streptomycin per cubic centimeter and to 5 units of penicillin per cubic centimeter.

The patient was started on streptomycin therapy August 4, the fourth postoperative day. He was given 0.4 Gm. of the drug every six hours for six days, 0.3 Gm. every six hours for the next two days, then 0.4 Gm. every four hours for the duration of the treatment. A total of 28.8 Gm. of streptomycin, or 28,800,000 units, was administered. (See the chart for the streptomycin blood levels and the coincident clinical response.) Streptomycin blood levels were taken two hours after one of the morning injections. There was one episode of chill and temperature elevation while the patient was receiving 0.3 Gm. every six hours for two days. Streptomycin blood levels on these two days dropped to 2 and 3 units, respectively. The final streptomycin blood level was taken twenty-four hours after the last injection. In twenty-four hours it had dropped from 25 units to 1.2 units per cubic centimeter of blood.

Throughout the course of streptomycin therapy, daily laboratory work was performed, which included hemoglobin determination, red blood cell count, white blood cell count, differential count and urinalysis. The red blood count was normal throughout the course of the disease. The white blood cell count ranged from 18,000 at the height of the disease to 8,000 prior to discharge. At no time was there any significant change in the differential count other than a relative increase in the percentage of polymorphonuclear leukocytes. Urinalyses were normal throughout the course of the disease. On August 3 the total bilirubin was 0.6 mg.; on August 7 it was 1.0 mg. per hundred cubic centimeters. On the same day the sulfobromophthalein retention was 0.8 mg. per hundred cubic centimeters. The cephalin cholesterol flocculation test was 3 plus in twenty-four hours and 4 plus in forty-eight hours. On August 15 the cephalin cholesterol flocculation test was 1 plus on both the twenty-four and the forty-eight hour determination.

The patient became asymptomatic six days before streptomycin therapy was discontinued and has remained so since then. At the time of writing it is five weeks since he has received any medicaments. At no time while on streptomycin therapy did he receive any other medicament that in any way could confuse the results obtained by streptomycin therapy. He at no time exhibited any sensitivity to the drug.

Operative Tissue Examination Report.—The specimen, examined by Dr. J. Y. Clarke Jr. of the Department of Pathology, consisted of an appendix 7 cm. in length. The serosal surface was congested and covered with a fibrinous exudate. There was a fibrous operculum over the distal end of the appendix. Microscopic sections revealed that the lumen of the appendix contained a hemorrhagic purulent exudate. The mucous membrane had been completely destroyed. There was extensive necrosis of the muscularis and of the connective tissues of the appendical wall. One of the larger veins of the subserosa was filled with neutrophils and partially hemolyzed red blood cells. The walls of the veins were infiltrated with neutrophils. Other large veins of the serosa and mesoappendix showed an infiltration of the neutrophils into the adventitia.

SUMMARY

A young man made a dramatic recovery in an extremely short time from pylethrombophlebitis, a disease that in the past has been almost uniformly fatal.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following reports. Howard A. Carter, *Secretary.*

HOME DIATHERMY

From time to time in the past ten to fifteen years, efforts have been made to promote the buying of home diathermy apparatus directly by the public. At first sight this may seem reasonable because the application of heat often brings relief from pain and is recognized as beneficial in many conditions. It is also argued that diathermy is much more convenient, and at times much more effective, than the hot water bottle and similar devices, and that modern improvements in the diathermy equipment might obviate such objections as the danger of burns to the patient and interference with radio equipment in the vicinity. Nevertheless, it has been necessary for the medical profession to oppose the general sale of diathermy equipment. The reasons for this policy need occasionally to be set forth.

Medical diathermy is the therapeutic use of heat generated within the tissues of the body by the high frequency current actually passing through the tissues. Such currents are applied by one of three methods: (1) conventional, long wave diathermy, in which large metal electrodes are applied directly to the surface of the body and constitute the terminals whereby the rapidly alternating current enters and leaves the body, (2) short wave diathermy, in which the large, flat electrodes are air spaced or insulated, do not make actual contact with the skin and simply induce the electrical currents in the body, and (3) short wave diathermy, in which a cable is so placed that the rapidly fluctuating electromagnetic field surrounding it affects the body of the patient. As is well known, all three types of diathermy apparatus can be made powerful enough to cook food and pop corn and, of course, can coagulate and kill tissues; when carefully controlled, they can be used to induce high fevers for the treatment of neurosyphilis and similar conditions. It is a truism that any material or device which is utterly incapable of harm is likely also to be ineffective therapeutically. Diathermy apparatus, if strong enough to be effective, should be employed with due caution as a medical instrument to treat specific conditions diagnosed by physicians.

It cannot be assumed that all tissues will be heated equally by diathermy. In some parts of the body there is a very active flow of blood through the capillary vessels, so that the tissues are cooled just as the engine of an automobile is cooled by the circulation of water through the radiator. Other parts of the body have a less active blood supply, and there are a few, like the lens of the eye, that have no blood vessels at all. Such parts are unable to cool themselves when heat is generated inside them as it is in diathermy, even when the tissues are normal. When tissues are diseased, the situation is generally worse, for the foot of a patient with arteriosclerosis, or the interior of a large tumor within the abdomen, may have a very poor blood flow. Such tissues can become overheated. Injuries to nerves or to the spinal cord often impair the sense of temperature in related parts of the body, so that the patient may be unable to tell when a paralyzed limb is overheated. Evidently there are many possibilities for localized damage by diathermy. In addition, however, the production of artificial fever by diathermy brings up the possibility of generalized damage, for there are cases on record in which the temperature went above the levels which nature seems to set for natural fevers, so that death resulted from heat prostration.

It is sometimes necessary to remind patients of the general objections to self medication or self treatment. A physician places at the disposal of his patient the wealth of accumulated human experience represented in his medical education and in his current reading of medical literature, as well as his own personal experience in medical practice. The physician is able to prescribe effective remedies when they are known, is able to protect his patient from supposed remedies that are potentially harmful and, finally, saves his patient valuable time and money by discouraging remedies known to be useless in his particular case. It is, in other words, part of his function to speak out when he sees money spent in dangerous or even ineffective ways. The medical profession obviously cannot encourage the expenditure of substantial sums by patients who wish to experiment privately with new devices instead of getting information from experts. It is also true that the advancement of medical knowledge is retarded if experimentation is done by patients and if the results, favorable or unfavorable, are left unpublished; the medical ideal is to carry out the testing of new procedures under conditions which permit the systematic assembling and publication of results.

There are numerous contraindications to diathermy that require a knowledge of medicine. Some widely disseminated advertising has failed to mention the dangers encountered in its use. Some firms have even recommended the use of home diathermy for conditions in which medical experience has shown it to be specifically contraindicated; for instance, acute nondraining cellulitis, acute infectious arthritis, any condition with a tendency to hemorrhage such as gastric ulcers, and conditions in which the temperature sense is lost, as in nerve injuries. Diathermy must also not be applied to the abdomen and pelvis in pregnancy or during menstruation and should not be applied to most types of tumors; yet some advertising has encouraged such misuse. The cautions against misuse are based on numerous very unfortunate mishaps known to physicians to have occurred during the early days of medical diathermy, and it is evident that the dangers of using a diathermy apparatus without explicit medical supervision should be emphasized. The end result of such "slot machine diathermy" may be not only severe physical injury but also the cause of lawsuits.

Realizing the therapeutic limitations of diathermy apparatus, the Federal Trade Commission has ordered several companies to cease from disseminating advertisements which represent directly, or through implication, that the respondent's diathermy apparatus may be easily and safely used in the home. The Council on Physical Medicine of the American Medical Association has repeatedly refused to accept home diathermy machines "for inclusion in its list of acceptable devices."

Under special circumstances it is possible that a physician will wish to recommend the renting of a diathermy machine for daily use in the home of a patient whose condition has been accurately diagnosed and whose treatment will be entrusted to some person with the requisite intelligence and training. It is apparent, however, that the indiscriminate use of diathermy equipment in the home is bad and that such devices should not be advertised as "recommended by the medical profession" when they are to be sold to the public. The selling of diathermy apparatus for self treatment at home is a modern form of quackery. It is the duty of the medical profession to denounce the unsupervised home use of diathermy as unsound and dangerous.

MAICO ATOMEER HEARING AID ACCEPTABLE

Manufacturer: The Maico Company, Inc., 21 North Third Street, Minneapolis.

The Maico Atomeer Hearing Aid is a three tube instrument, with transmitter and batteries contained in a single case. The case presents a pleasing appearance, is rectangular with rounded edges and corners and is constructed of smooth ivory colored plastic. The combined "on-off" switch and volume control are located at the top of the case. The tone control or frequency response characteristic of the instrument can be modified by inserting a small screw or screws in the amplifier chassis, which is accessible only after the back of the case has been opened. Either of two different size crystal earpieces for air conduction can be used with the instrument.

Maico Atomeer Hearing Aid.

Dimensions: Case, 4½ by 2⅜ by $\frac{15}{16}$ inches (11.4 by 6.0 by 2.3 cm.).

Weight: Case with batteries, cord and receiver, 7¼ ounces (177 Gm.).

Current consumption: A battery (1.25 volt mercury cell), 55 milliamperes; B battery (30 volt minimax), 0.22 milliampere; battery current is constant regardless of setting of volume or gain control.

Maximum acoustical	Frequency							
gain..........	250	500	1,000	2,000	3,000	4,000	5,000	cycles per second
Large receiver	38.0	43.0	48.0	52.5	49.0	39.0	26.0	decibels
Small receiver	33.0	37.5	42.0	49.0	52.5	48.5	33.0	decibels

These gain measurements were obtained with the frequency response characteristic adjusted for maximum wide frequency response.

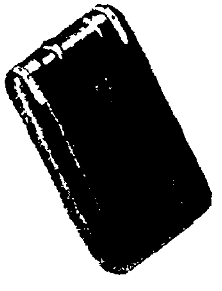
Performance: The Maico Atomeer operates in an entirely satisfactory manner. There is a minimum of inherent, case and cord friction noise.

The Council on Physical Medicine voted to accept the "Atomeer Hearing Aid" for inclusion in its list of accepted devices.

TRIMM VACUUM TUBE HEARING AID ACCEPTABLE

Manufacturer: Trimm Distributors, Inc., 1770 West Berteau Avenue, Chicago.

The Trimm Model #300 Vacuum Tube Hearing Aid is a four tube instrument, with a separate battery pack, consisting of a 1½ volt A battery and a 22½ to 45 volt B battery. The transmitter case presents a pleasing appearance, is rectangular with rounded corners and edges and is constructed of a smooth ivory colored plastic material. The combined "on-off" switch and gain control are located at the top of the case. The frequency response characteristic of the instrument can be varied by inserting one or two set screws in the recess on the side of the case into which battery and earphone plugs also are inserted. Either of two different earphones can be used with the instrument. Receiver #240 has slightly less gain and wider frequency response than receiver #242.


Trimm Vacuum Tube Hearing Aid Model #300.

Dimensions: Case, $4\frac{5}{16}$ by $2\frac{9}{16}$ by ¾ inches (10.9 by 6.6 by 1.8 cm.). The receivers and batteries are of standard or conventional size.

Weight: Case, receiver and cords (but not including batteries), 7½ ounces (212 Gm.).

Current consumption: A battery (1½ volts), 75 milliamperes. B battery (45 volts), 1.0 milliampere. B battery (33 volts), 0.67 milliampere. Battery current drain is independent of volume control setting.

Maximum acoustical gain	250	500	1,000	2,000	3,000	4,000	5,000	cycles per second
No. 242 receiver	39.5	43.5	43.0	52.0	36.5	39.0	26.5	decibels
No. 240 receiver	34.0	40.0	40.5	44.0	51.5	49.5	48.5	decibels

These measurements were obtained with a 45 volt battery, and the tone control was adjusted to give maximum overall frequency response. Insertion of the tone control set screws attenuates the low frequency response. The gain is approximately 5 decibels less with a 33 volt battery than with the 45 volt battery. The gain will be still less with a 22½ volt B battery.

Performance: The Trimm Model #300 Vacuum Tube Hearing Aid operates in an entirely satisfactory manner. Case and cord friction noise are noticeable but not excessive.

The advertising matter appears to be satisfactory.

The Council on Physical Medicine voted to include the Trimm Model #300 Hearing Aid in its list of accepted devices.

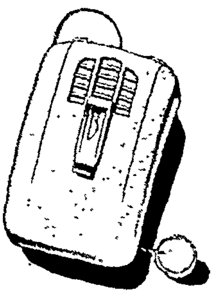
BELTONE HARMONY MONO-PAC HEARING AID ACCEPTABLE

Manufacturer: Beltone Hearing Aid Co., 1450 West 19th Street, Chicago.

The Beltone Harmony Mono-Pac Hearing Aid is a vacuum tube type of instrument of the single case construction. The microphone, amplifier and batteries are contained in a single molded plastic case. The lower half of the case is hinged, giving easy access to the A and B batteries. Volume and tone are controlled by milled disks at the top of the instrument. On and off positions of both controls are clearly marked.

The microphone case is 4½ by 2¾ by ⅝ to 1 inches (11.4 cm. by 7.0 by 1.6 to 2.5 cm.) and weighs 7.7 ounces (218 Gm.).

The magnetic receiver is ⅞ inch (2.2 cm.) in diameter by ½ inch (1.5 cm.) thick and weighs 0.6 ounces (17 Gm.).


Beltone Harmony Mono-Pac Hearing Aid.

Battery Data.—A battery, mercury type, voltage 1.12; current drain, full volume setting, 41 milliamperes. B battery, carbon-zinc type, nominally 30 volts but showing 26 volts under current drain of 0.7 milliampere.

Acoustical Gain.—Measurements of the gain in decibels in the sound pressure level set up in a 2 cc. coupler over the pressure level at the microphone were made at nineteen frequencies between 200 cycles and 4,096 cycles for an input level of 50 decibels measured on the B scale of a General Radio Sound Level Meter. Typical results are tabulated as follows:

Gain (volume control three fourths on):

	Frequency							
Tone Control	256	512	1,024	1,400	2,048	3,100	4,096	cycles per second
"Three dots"	49	52	56	57	49	46	40	decibels
"One dot"	31	41	46	49	44	40	35	decibels

Approximate values of the maximum pressure levels in the coupler were determined at four frequencies with the volume control of the instrument set three fourths on, and tone control on "three dots."

The values obtained were as follows:

Frequency	Input Level	Maximum Output Level
600	70 db.	121 db.
1000	66 db.	120 db.
1400	64 db.	115 db.
3000	64 db.	108 db.

The usual articulation and intelligibility tests were made with a hard of hearing subject with the following results:

Syllable articulation, 94 per cent.
Sentence intelligibility, 100 per cent.

The whispered voice was heard and easily understood at a distance of 5 feet in quiet surroundings.

The instrument is compact and well made throughout and is reasonably free from internal noise.

The Council on Physical Medicine voted to include the "Beltone Harmony Mono-Pac" in its list of accepted devices.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

ESTROGENIC SUBSTANCES (See New and Nonofficial Remedies, 1946, p. 443).

The following dosage form has been accepted:

E. S. Miller Laboratories, Inc., Los Angeles

Solution of Estrogens (in Oil): 1 cc. ampuls and 10 cc. and 30 cc. vials, each being available in potencies containing the equivalent of 5,000 international units per cubic centimeter or 10,000 international units per cubic centimeter; 10 cc. and 30 cc. vials being available in potencies containing the equivalent of 20,000 international units per cubic centimeter of estrone in a neutral vegetable oil, with benzocaine 2 per cent. Preserved with cresol 0.5 per cent.

GLOBIN INSULIN WITH ZINC (See New and Nonofficial Remedies, 1946, p. 450).

The following dosage forms have been accepted:

E. R. Squibb & Sons, New York

Globin Insulin with Zinc: 10 cc. vials. Each cubic centimeter contains 40 units; 0.25 per cent phenol as preservative.

Globin Insulin with Zinc: 10 cc. vials. Each cubic centimeter contains 80 units; 0.25 per cent phenol as preservative.

EPHEDRINE SULFATE (See New and Nonofficial Remedies, 1946, p. 286).

The following dosage forms have been accepted:

E. S. Miller Laboratories, Inc., Los Angeles

Capsules Ephedrine Sulfate: 25 mg. and 50 mg.

Solution Ephedrine Sulfate: 50 mg. in 1 cc. ampuls. Preserved with chlorobutanol 0.5 per cent.

PENICILLIN (See New and Nonofficial Remedies, 1946, p. 212).

The following additional dosage form has been accepted:

Schenley Laboratories, New York

Penicillin Sodium: 20 cc. vials containing 200,000 units or 500,000 units.

CHINIOFON (See New and Nonofficial Remedies, 1946, p. 262).

The following dosage form has been accepted:

Premo Pharmaceutical Laboratories, Inc., New York

Chiniofon Enerels: 0.25 Gm. tablets coated with shellac.

PHENOBARBITAL (See New and Nonofficial Remedies, 1946, p. 530).

The following dosage form has been accepted:

E. S. Miller Laboratories, Inc., Los Angeles

Tablets Phenobarbital: 15 mg., 30 mg. and 100 mg.

CALCIUM LEVULINATE (See New and Nonofficial Remedies, 1946, p. 480).

The following dosage form has been accepted:

The J. F. Hartz Company, Detroit

Calcium Levulinate 10%: 10 cc. ampuls.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - CHICAGO 10, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Eight dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, FEBRUARY 22, 1947

THIOURACIL DERIVATIVES IN HYPERTHYROIDISM

In a previous editorial[1] THE JOURNAL noted the studies of goitrogenic substances by the MacKenzies, by McCollum and by Astwood. These investigations demonstrated that the sulfonamides and thiourea exert a depressing influence primarily on the functional activity of the thyroid and hence on the basal metabolic rate. Thyroid hyperplasia has been shown to be a reflection of increased pituitary activity resulting from the depression of thyroid function. Rawson and his collaborators[2] recorded a lowering of the basal metabolic rate, relief of symptoms, increase of hyperplasia of the thyroid with loss of colloid and increase in vascularity in 19 patients with diffuse toxic goiter treated with thiouracil. They[3] noted also a decreased avidity for iodine by the thyroid gland as shown by the greatly impaired correlation of radioactive (tracer) inorganic iodine with increased elimination in the urine. McGavack and his associates[4] reported the results of treating 26 thyrotoxic patients with thiouracil and reviewed 109 cases reported in the literaure. In 16 of the 135 reported cases there was a toxic or a hypersensitive reaction.

Thiouracil has been used in hyperthyroidism either as a medical treatment per se or as a preoperative treatment in thyroidectomy. In a study of 1,091 cases reported from eleven clinics in the United States and from one clinic in England Moore[5] found that the incidence of untoward reactions from thiouracil was between 8 and 10 per cent. Of these reactions agranulocytic angina, leukopenia and high fever make cessation of drug administration virtually mandatory. A statistical study by Van Winkle and his associates[6] of 5,745 patients treated by 328 clinical investigators revealed that thiouracil is effective against hyperthyroidism both of the diffuse toxic and of the nodular toxic type, but it is not valuable in simple goiter. The optimum dosage schedule appears to be 0.4 Gm. per day in divided doses initially; after the symptoms are controlled or the basal metabolic rate is within normal range the dosage should be reduced to 0.1 or 0.2 Gm. per day. Thiouracil should be used for preoperative treatment or for patients for whom operation is contraindicated. Many patients, particularly those who have received previous iodine therapy, do not respond immediately to thiouracil therapy; hence medication should be continued for at least thirty days or for sixty to one hundred days before concluding that no response to thiouracil is possible.

Granulocytopenia occurs in about 2.5 per cent of the cases treated and is the most serious complication of thiouracil therapy. This reaction tends to occur in the early weeks of treatment; indeed, 80 per cent of the cases were seen by the twelfth week of therapy. Relationship to the dose of thiouracil was not apparent. Treatment of this complication should consist of massive doses of penicillin (500,000 units per day). Leukopenia had an incidence of 4.4. per cent. Drug fever had an incidence of 2.7 per cent seen early in treatment, 85 per cent occurring in the first four weeks but not related to dosage. Skin reactions had an incidence of 3.3 per cent. Urticaria was the most common, but various other dermatoses were seeen. Patients should be instructed to report immediately to their physician if any adverse symptoms such as sore throat, fever, coryza or malaise are experienced.

Rawson points out that one of the disadvantages of thiouracil in the preoperative treatment of thyrotoxic patients is its tendency to increase both the thyroid hyperplasia and vascularity. When iodine is added to the thiouracil preparation, involution of the thyroid and decreased vascularity follow. The time required to prepare a patient for thyroidectomy with thiouracil is longer than that usually required when iodine is used as the sole agent.

A continued investigation of compounds which inhibit the function of the thyroid gland has revealed that appropriate substituents on the thiouracil molecule confer a greatly increased activity. Astwood and VanderLaan[7] have assayed some three hundred compounds for their antithyroid activity and found that 6-ethylthiouracil and 6-n-propylthiouracil are approximately ten times as active as thiouracil in animal tests and five times as active in man as thiouracil. In clinical tests on 37 patients 6-n-propylthiouracil was found to be more active than thiouracil. These compounds were tolerated by patients who had previously reacted unfavorably to the administration of thiouracil or thiobarbital. Untoward reactions were not observed in these cases.

---

[1] Thiourea and Thiouracil in Treatment of Thyrotoxicosis, editorial, J. A. M. A. **126**: 172 (Sept. 16) 1944.

[2] Rawson, R. W.; Evans, R. D.; Means, J. H.; Peacock, W. C.; Lerman, J., and Cortell, R. E.: The Action of Thiouracil on the Thyroid Gland in Graves' Disease, J. Clin. Endocrinol. **4**: 1 (Jan.) 1944.

[3] Rawson, R. W., and McArthur, Janet W.: What Has Thiouracil Contributed to the Management of Graves' Disease? New York State J. Med. **46**: 2733 (Dec. 15) 1946.

[4] McGavack, T. H.; Gerl, A. J.; Vogel, Mildred, and Schwimmer, D.: The Treatment of 26 Thyrotoxic Patients with Thiouracil and a Review of Toxic Reactions in All (135) Reported Cases, J. Clin. Endocrinol. **4**: 249 (June) 1944.

[5] Moore, F. D.: Toxic Manifestations of Thiouracil Therapy, J. A. M. A. **130**: 315 (Feb. 9) 1946.

[6] Van Winkle, W., Jr.; Hardy, S. M.; Hazel, G. R.; Hines, D. C.; Newcomer, H. S.; Sharp, E. A., and Sisk, W. N.: The Clinical Toxicity of Thiouracil, J. A. M. A. **130**: 343 (Feb. 9) 1946.

[7] Astwood, E. B., and VanderLaan, W. P.: Thiouracil Derivatives of Greater Activity for the Treatment of Hyperthyroidism, J. Clin. Endocrinol. **5**: 424 (Dec.) 1945.

A chance observation by Jeantet of Lyons that workmen employed in the extraction of aminothiazole, which is used in large quantities for the preparation of sulfathiazole, developed goiters without however any signs of thyrotoxicosis and with lowered basal metabolism, suggested that the substance might be useful in the treatment of hyperthyroidism. Perrault and Bovet[8] administered aminothiazole to 129 patients with thyrotoxicosis and did not observe agranulocytosis or any other signs of intolerance reported from the use of thiouracil. They found the drug effective and easy to administer. Wilson[9] in a comparative study of thiouracil and methylthiouracil found that the response to the treatment is more rapid when the latter drug is used and that the maintenance dose of methylthiouracil is smaller than that of thiouracil.

Thiouracil and its derivatives have undoubtedly contributed much to the management of hyperthyroidism. Whether a complete cure by medication alone will be possible is at present conjectural and will probably depend on the development of less toxic derivatives of thiouracil.

VALUE OF GASTRIC LAVAGE IN TREATMENT OF ACUTE POISONING

For a century gastric lavage has been used in treating acute poisoning. Except for some adjuvants, such as use of an appropriate solvent, an adsorbent, such as charcoal, or neutralizing agent, changes have not been made in this procedure. Its value has not been questioned nor its efficiency doubted. However, a systematic examination of the procedure was made in 1942, for the first time, by Harstad, Møller and Simesen of the Pharmacologic Institute of the University of Copenhagen and of the Psychiatric Department of the Bispebjaerg Hospital in Copenhagen[1] with results which indicate its inefficiency and the desirability of more scientific consideration of procedures in acute poisoning.

Møller and his associates made quantitative studies of the volume of fluid and of the amount of poison removed from 80 persons acutely poisoned with several different drugs. Prior to their systematic investigation analytical results over a period of years, obtained from many cases of poisoning without benefit of gastric lavage, had showed extremely variable and sometimes comparatively small removal of poisons. For instance, the hypnotics, especially barbiturates, could be found in rather large quantities several hours after these drugs had been taken. This would suggest the desirability of delayed gastric lavage for promoting recovery. Of the rapidly acting poisons, however, cyanides were found only in small quantities, but nicotine often in large and surely fatal amounts. Yet both drugs are rapidly absorbed. Theoretical explanations might account for these variations, but the first question posed to the Copenhagen investigators was that of the efficiency of the procedure.

The most important features examined were the total volume of wash fluid and the proper use of it. As much as 10 to 40 liters has been recommended, used freely. Møller and his associates proceeded as follows: With the patient in the supine position and a conventional stomach tube in position, lavage was made with lukewarm water through an attached funnel, 1 liter being used at a time up to a total of 10 liters. The volume siphoned off was collected in five portions, the first portion consisting of the amount that could be removed after the first liter, the second after the second liter, the third after the third and fourth liters, the fourth after the fifth, sixth and seventh liters, and the fifth, or last, portion after the eighth, ninth and tenth liters. The five collections of residual wash fluid were then subjected to analysis for the different drugs. Seventy-one of the patients, constituting a majority, were being treated for barbiturate poisoning of variable severity; the majority were unconscious and about 23 per cent died. Treatment was continued with charcoal and magnesium sulfate after the stomach washings had been completed. The striking result was that the total washings from the majority of the patients did not show demonstrable removal of any barbiturate, only small quantities such as 10 mg. being found occasionally. In fatal cases, when barbiturate was not found in the gastric washings the presence of the drug was confirmed in the intestinal contents. There was no correlation between the quantity of poison in the washings and the time interval between lavage and the taking of the drug. Other drugs tested for in stomach washings were acetophenetidin, salicylic acid, quinine, nitrobenzene and tetrachlormethane. However, not more than about 3 per cent of any drug taken was found in washings which gave positive results except quinine, of which 12 per cent was removed. In only 5 of 80 patients who took a barbiturate, aspirin or quinine in tablets or pills was there more than 0.5 Gm. of the poison recovered from the total wash fluid. In these cases the first portion contained the most, or a median of 52 per cent, of the drug (range 3 to 83 per cent), the second portion a median of 11 per cent (range 3 to 16 per cent), the third portion a median of 9 per cent (range 5 to 22 per cent), the fourth a median of 11 per cent (range 2 to 39 per cent) and the fifth the least, or 6 per cent (range 1 to 63 per cent). Although the number of cases was small and the variation considerable, these results show that removal of poisons from the stomach by washing is facilitated by repeated use of smaller volumes of solvent, a time honored principle that is of great practical importance in analytical chemistry.

---

[8] Perrault, M., and Bovet, D.: Aminothiazole in the Treatment of Thyrotoxicosis, Lancet **1:** 731 (May 18) 1946.

[9] Wilson, A.: Thyrotoxicosis Treated with Thiouracil and Methylthiouracil, Lancet **1:** 640 (May 4) 1946.

[1] Harstad, Elisabeth; Møller, Knud O., and Simesen, Margrethe H.: Ueber den Wert der Magenspülung bei der Behandlung von akuten Vergiftungen, Acta med. Scandinav. **112:** 478, 1942.

Consistent with all this were results in dogs with a ligated pylorus and given 2 Gm. of a barbiturate: only 30 per cent of the drug was recovered in the first liter of wash water put into a filled stomach and 22 per cent in the second liter, a total of 52 per cent. From an empty stomach 60 per cent was recovered in the first liter but only 3 to 4 per cent in the second liter, a total of 63 per cent. Other considerations showed that washing with 2 liters in dogs left at least 22 per cent of the barbiturate in the stomach.

An equally important observation made by the Copenhagen investigators was that only 75 per cent of the 10 liters of wash fluid could be removed by lavage. The remainder, or about 2.4 liters, escaped into the intestine. X-ray examination of patients showed that the wash fluid passed rapidly into the intestine. When charcoal was used in unconscious patients, charcoal was found adherent to the bronchi, and microscopically in the pulmonary alveoli, as a result of aspiration of stomach contents. The authors properly conclude that lavage is generally contraindicated in unconscious patients unless there are special indications. However, lavage with use of charcoal is indicated in conscious patients. They recommend that the foot end of the bed be raised, the head turned to its side and an aspirator used to remove vomitus or other material from the mouth.

Here are the general conclusions to be derived from the laborious and highly commendable work by Møller and his associates: Gastric lavage is generally inefficient and often valueless in cases of acute poisoning; its efficiency can be increased by use of relatively small volumes of fluid; gastric lavage promotes passage of a poison into the intestine; when four hours has elapsed after a poison has been taken, lavage is only exceptionally effective; the bulk of a poison leaves the stomach rapidly, especially in suicides, who often take it on an empty stomach; in conscious persons evacuation by emesis with the aid of apomorphine is superior to lavage; lavage is generally contraindicated in unconscious persons but, if done, should be combined with aspiration; adsorption of poisons on the gastric mucosa is important only with heavy metals and a few other substances, removal of these being preferably done by aspiration of contents followed by lavage with 1 to 2 liters of water containing 10 Gm. of charcoal per liter. This time honored method cannot be advantageously applied without recognition of equally time honored principles of physical chemistry and physiology.

AN AMERICAN MEDICAL TEACHING MISSION TO CZECHOSLOVAKIA

In the summer of 1946 an American Medical Teaching Mission[1] spent two months in Czechoslovakia, where for six years (1939-1945) medical teaching and investigation had been completely blacked out by the Nazi occupation. The visit of the American mission initiated a friendly international interchange in medicine that may develop a feature of much importance for the future health and happiness of central Europe. The cordial and indeed affectionate friendship that was exhibited by the Czechoslovakian, Moravian and Slovakian physicians for their American colleagues was heartening.

Czechoslovak medicine, itself at the crossroads, will no doubt abandon the Germanic tradition in education and practice. Whether it will now follow the Western pattern led by the United States or the Russian one or some intermediate one of its own creation (which seems most likely) remains to be seen. Since education in science is largely unitary and since physicians are important in shaping a people's orientation, the way in which Czech medicine does develop can have long range consequences.

For six years all higher education in Czechoslovakia was abolished by the German rulers. Medical students worked at forced labor, melted into the underground or escaped to fight in the Allied armies. Teachers were selected, with other intellectual leaders, for prompt consignment to concentration camps. Perhaps a fourth never reemerged; a few who did were broken men; the remainder are busily rebuilding medical education. University clinics and laboratories and the urban hospitals were little damaged except at the Masaryk University of Brno, where some vagrant bombs missed the railroad station and hit the medical group. Here the departments are being housed in the technical high school, and rebuilding is in progress. Apparatus and equipment were largely stolen or destroyed or, when buried before the Germans arrived, eroded. The libraries were, on the whole, preserved except for a complete gap from 1939 until 1946.

---

[1] The mission, initiated by the Unitarian Service Committee and supported by UNRRA and the Czechoslovak government, included Joseph C. Aub, professor of research medicine, Harvard Medical School; Alexander Brunschwig, professor of surgery, University of Chicago School of Medicine; Leo Davidoff, professor of clinical neurological surgery, Columbia University College of Physicians and Surgeons; Ralph W. Gerard, professor of physiology, University of Chicago School of Medicine; L. Emmett Holt Jr., professor of pediatrics, New York University College of Medicine; Otto Krayer, professor of comparative pharmacology, Harvard Medical School; Josef Lazansky, assistant professor, Tufts Dental School; Milan A. Logan, professor of biological chemistry, University of Cincinnati College of Medicine; Colin MacLeod, professor of bacteriology, New York University College of Medicine; Everett D. Plass, professor of gynecology and obstetrics, State University of Iowa College of Medicine; Emery Rovenstine, professor of anesthesia, New York University College of Medicine; J. E. M. Thomson, president of the American Academy of Orthopedic Surgeons; Joseph Volker, professor of clinical dentistry, Tufts Dental School; Paul D. White, clinical professor of medicine, Harvard Medical School, chairman, and Erwin Kohn, executive director.

The consequences of this period of stagnation and disruption are obvious. Now an unrestrained horde of students has flooded into medicine: 6,000 freshmen medics for a country of 12 million! Three new medical schools were initiated, at Plzen, Olomouc and Hradec Kralove, to supplement the reopened ones at Prague, Brno and Bratislava, but this helps little since the wofully depleted staff and equipment are only stretched thinner. At the great Charles University in Prague, with 3,500 medical entrants, lectures were given in the largest theaters in the city and the preclinical laboratories ran from 8 a. m. to 10 p. m., with each student getting in some score of hours during the year in physiology. The clinics are equally overwhelmed.

Partly in consequence of this situation, medical education is heavily didactic. The curriculum, as contrasted with ours of the present day but resembling our earlier proportions, is heavily weighted toward structural subjects; four years of courses are devoted to histology, gross anatomy and surgical anatomy. There is no opportunity for the student to loiter in some department for special training or research; he must go right through for his M.D. Research in Czechoslovakia, as a result, is anemic in both the preclinical and the clinical area.

The government and the medical leaders are well aware of these lacks and are eager to remedy them. This year's freshman medical class at Prague has been ruthlessly held to 350. The government has appropriated relatively large sums to increase the support of medical science, especially at the preclinical level. Some Czechoslovak medical men are on their way to the United States to learn in our laboratories and clinics, and many more would come at the drop of a visa. Perhaps excellent advantage would derive from a visit by the head professors from one Czech medical school as a group to one of our leading medical schools. On their return, they could introduce, as a unit, a new and forward looking curriculum which would be a pilot plant for central Europe.

Conversely, further movement from here to Czechoslovakia of medical experts, literature and supplies would greatly aid the immediate practice of medicine. American pilot units in physiology, clinical medicine and surgery might be temporarily installed at Charles University in Prague, with benefit to all concerned. The use of anesthesia is backward and, in general, the medical specialties have not been fostered. The eager friendliness with which the mission from the United States was welcomed indicates how much such help is desired.

Current Comment

PREVENTION OF GENETIC DISEASE

Study of the factors and principles of inheritance in relation to disease has developed a relatively new science of great value, the science of medical genetics. In a recent lecture before the New York Academy of Medicine Snyder[1] presented an instructive discussion of the application of medical genetics to public health and clinical medicine. The part dealing with prevention is of special interest. Snyder says that the applications of medical genetics in the field of prevention is of great potential value. "It is becoming more and more feasible," he says, "to prevent in the relatives of persons with genetic conditions the appearance of the abnormality or disease. The procedure is to examine the relatives of an affected patient by means of suitable laboratory tests, in search of the early preclinical . . . signs of the trait. When these are discovered, preventive measures are instituted." He gives two examples: The removal of the spleen of the potential patient with as yet subclinical signs of congenital hemolytic icterus detectable only by appropriate blood tests. And xanthoma tuberosum, a lipoidal storage disease, with possible fatal cardiovascular involvement, which can be detected by blood tests and preventive measures instituted before tumors have formed. These are diseases of dominant heredity and consequently the incidence of affected relatives is high. Probably the method of prevention and cure described by Snyder is applicable also to other diseases of genetic nature than those mentioned. Experience will determine the scope and value of the method.

MORTALITY FROM LEUKEMIA

According to the figures available from the United States death registration area, the crude mortality rate from leukemia has risen from 1.0 per hundred thousand of population in 1900 to 4.3 per hundred thousand in 1944. The rise appears to have been more or less continuous, with a rate of 1.9 per hundred thousand in 1920. Sacks and Seeman,[1] who have been studying the mortality from leukemia, found that white persons are affected at a rate more than twice as great as nonwhite persons, and males at a rate approximately one-third greater than females. According to these investigators, leukemia affects persons in the older ages, particularly after 55, with greatest frequency. More persons in the United States died from the leukemias in 1942 than from smallpox, meningococcic meningitis, scarlet fever, malaria, poliomyelitis, typhoid and diphtheria combined. Since 1940 more than 5,000 persons have died of the leukemias in the United States each year. As the Baltimore investigators point out, there are undoubtedly many deaths from leukemia in which this disease is neither diagnosed nor recorded on the death certificate.

---

1. Snyder, L. H.: Medical Genetics and Public Health, Bull. New York Acad. Med. 22: 566 (Nov.) 1946.

1. Sacks, Milton S., and Seeman, Isadore: A Statistical Study of Mortality from Leukemia. Blood, the Journal of Hematology 2: 15 (Jan.) 1947.

ORGANIZATION SECTION

ANNUAL CONFERENCE OF SECRETARIES AND EDITORS OF CONSTITUENT STATE MEDICAL ASSOCIATIONS

DR. JULIAN P. PRICE, Florence, S. C., Presiding

SATURDAY, DECEMBER 7, 1946—MORNING

Function of State Organizations

DR. R. L. SENSENICH, Chairman, Board of Trustees, American Medical Association, South Bend, Ind.: The state societies the executive secretaries and the editors are an important part in the machinery of the organization. It is your task—and you do it very well—of taking information to the profession of your state communities and, in turn, receiving from them the reports of their experience. You assist in the interpretation of experience and interpretation and evaluation of the social attitudes as they are developing. Lastly, you assist in giving form to the thinking and planning of the profession in the state. THE JOURNAL is the medium of communication, and the executive secretary is in contact with the profession of the state and, in large part, assists physicians in improving their local situation. Medical societies have engaged in new enterprises and must of necessity continue to engage in them. You are in business now. In most states you have insurance plans with which you are pretty closely related. We are trying to improve the public relations, and in that also you are important figures.

Dr. Julian Price, Florence, S. C., was elected Chairman.

DR. GEORGE F. LULL, Secretary of the American Medical Association: We welcome you here to headquarters. I can only endorse what the Chairman of the Board of Trustees has already said. We are glad to have you here and to carry on your deliberations at these headquarters. There will also be an opportunity for many of you to carry on informal discussions with members of the staff. I prepared no talk today, but my attention was called to an article in the *Scientific Monthly* for October 1946 from which I will read a few excerpts. The subject is "Running a Professional Society, or the Happy Life of an Executive Secretary." This is written by Dr. Henry Clepper, the executive secretary of the American Foresters in Washington.

(Dr. Lull read excerpts from the article.)

I think that there is a lot in it of good, sound common sense, and it would pay all of us who are employed in executive capacity as secretaries to read the article.

CHAIRMAN PRICE: I want to thank Dr. Lull for the cooperation which he gave to a group appointed at the San Francisco session. At that time five of us were asked to serve as a committee to work with him in getting up the program for today. We met; we made our recommendations, and the program that we have today is the combined effort of this committee of five working with Dr. Lull.

DR. LULL: I want to present to the Secretaries and Editors a new member of our staff here at Headquarters who has a few words to say to you about the Emergency Medical Service Committee questionnaire. Dr. Leland was director of our Bureau of Medical Economics for a number of years and became too ill to continue. The Bureau has had its name changed to the Bureau of Medical Economic Research. We have been fortunate in securing the services of Dr. Dickinson, who was associate professor of economics at the University of Illinois. Dr. Dickinson has been working closely with the Committee on Emergency Medical Service and has just a few words to say about this questionnaire.

Postwar Questionnaire

DR. FRANK G. DICKINSON, Director, Bureau of Medical Economic Research: In the absence of Dr. Bortz, I want to thank you for the splendid cooperation you have given us on this postwar questionnaire. To date we have received the phenomenal return of 30 per cent, and eventually it will probably exceed 50 per cent. About four fifths of the physicians are signing their names to the questionnaire and, as you know, that was optional. About 2 per cent of them are attaching letters, and those letters will be read. It will take us approximately four months to code, punch, tabulate and analyze the results of the questionnaire.

Physicians are not county coroners, yet all of the statistics from Washington and elsewhere have made it appear that physicians served only people resident in the county, and a great many false statements have been made on that account about the absence of medical care. With hard roads and all the other improvements, it seems to us that it is rather silly to talk about the supply of medical service in an area which is a political area, that is a county. The practice of medicine has its economic aspects, and therefore we should develop as soon as possible these medical service areas and then quote the proper number of physicians available for the people in that area, and we shall have a figure on the supply of medical service which belongs in the twentieth century and not in the nineteenth, when we didn't have automobiles and other means of rapid transportation.

DISCUSSION

DR. HOLMAN TAYLOR, Fort Worth, Texas: I should like to ask a question. What would be the real objection to these areas, these trade territory areas, overlapping? It would be absolutely impossible for anybody to determine, for instance, as to the trade territory or area of medical influence as between Dallas and Fort Worth and north Texas and the wide open spaces. With the thickly populated places it is still more impossible to do it. Areas are going to overlap.

DR. DICKINSON: The objection is we don't know how to prorate the physicians for areas that overlap. What is done in most retail trading area studies, of which this is a counterpart of course, is to try by some means to determine whether 55 per cent go to Dallas and 45 per cent go to Fort Worth. If you have any way of determining that as to the number of patients, you can answer the question right there as to where you should draw your line. To which community, to which central community, do the majority of patients in the community go? That is the basis for the answer where you have borderline towns between.

DR. TAYLOR: It is not merely conjecture, but a real problem with all the Southwestern territory. If 45 per cent go to one town and 55 per cent to another nearby, I don't know how you can make the division merely on 5 per cent. What happened to the minority?

DR. DICKINSON: Include the town in question in the area in which the 55 per cent of the patients go rather than in the area to which only 45 per cent go.

State Medical Society Participation in Network Broadcasts

DR. W. W. BAUER, Chicago, Director, Bureau of Health Education: The Bureau of Health Education planned to make the annual series of network broadcasts of special interest this year with the double purpose of marking the Association's Centennial and of identifying the state medical societies more closely with our network broadcasting. A program of medical progress in the past hundred years seemed the most natural choice. In order to tie this program to the state medical societies, the selection of historical events by states or regions seemed preferable. We have but twenty-six weeks of network program. We divided the United States into twenty-five regions ranging from one state to as many as five states.

A brief sketch of the mechanics of handling this program may be of interest, as I have written recently to state society secretaries, urging them to send us more material and to send it more quickly. It was our proposal to have each state medical society, or in regional groupings all the societies concerned, suggest a significant event in medical history in that region as a basis for our broadcast. We proposed to have each program closed by a speaker from within the region, speaking from a station within the region, and briefly summarizing medicine in that area today. The next step was to await replies from the state societies as to their choice of historical events and their nominations of speakers. It soon proved impracticable to expect doctors to travel several hundred miles for a three minute radio talk, so we have been forced to pick the speaker up in his home community if there is a National Broadcasting Company station there. Reversing this procedure, we may have to select our speakers from communities where there are N. B. C. stations.

When the material began to come in from the states, it was apparent that we had assumed more experience with radio on the part of state medical society committees than actually existed. What we were after was personal material about a man, his personality, community relationships, humorous aspects of his career and, in general, feature story material. This we have not received in sufficient quantity to date, with one or two exceptions. May I suggest to you that for a small sum the state society could hire a reporter from a newspaper or a press bureau and tell him what is wanted, and in a few days the reporter will supply a greater quantity of usable copy than would probably be dug up by forty doctors in a year. This is simply because the reporter knows exactly what we want and is accustomed to getting it. After we get the material the script must be written and reviewed. That takes ten days. Then it must be copied and sent to each medical society for review and to each speaker who is to appear in connection with the broadcast. This is good for another five days. It must be mimeographed at N. B. C. because at least thirty copies of a script are needed for production. If we sometimes get a little panicky when responses are long in coming from the states and send urgent telegrams, please do not put it down to inherent meanness. When all this has been done, our next problem is to get the speech from the speaker. This brief summary indicates some of the problems which we face. I hope that when you return to your states, if you have not already done so you will send us your radio material at the very earliest opportunity. We cannot give you your date until we have adequate material for your program in our hands. Until we give you your date, you cannot publicize your broadcast. Without publicity, much of its effectiveness is lost.

The State Medical Society and the State Government

DR. CREIGHTON BARKER, New Haven, Conn.: My experience in government relations has been limited to our own state. I started several years ago to develop the legislative and governmental program of the Connecticut State Medical Society without hindrance from traditional precedent, and I have had the opportunity to see a carefully thought out plan develop. At the state level medical societies can be of the greatest public and political service. It is possible for our societies to develop positions as quasi governmental bodies, and the more nearly they approach this, always maintaining their independence and autonomy, the more useful they will be. If a society accepts these responsibilities unselfishly and with skill it will rate high in public confidence and esteem.

All our states are engaged in activities having to do with the health and welfare of the people, and in one way or another the government does provide some medical care. The planning and direction of these programs lie with citizen boards, and the basis of good relationship with a state government is to have the state medical societies in a position to be consulted about appointments to these boards and agencies. Once this honorable extension of medical society influence has been established, it becomes difficult to put into effect measures which are not compatible with our ideals. Physicians on the boards of such agencies have an unusual opportunity to analyze the effects of proposed measures and oppose them if they are not acceptable to medicine, thus adding the weight of government to the side of medicine and not leave the profession to stand alone as a defensive minority. In contrast we have all seen medical society activities limited to noisy opposition to legislation on the spur of the moment with packed hearings and excited telephoning. I am sure the first, calm, constructive method is the more dependable.

What kind of a person should a wise legislative agent be? No one can answer this precisely. I like the calm, deliberate fellow best. It is not enough to have streaks of shrewdness; wisdom is required. The best two operators in our state are of this type. One of them is rarely seen around the capitol and I have never heard him make a speech; the other sits quietly through hearings and waits until he is asked to express his opinion; this, I may add, is impressive technic. On many occasions we three have discussed the business in which we are engaged. "Don't talk too much," says the one. "Don't waste your time trying to explain things in committee hearings," advises the other friend, "put your information in a memorandum and send it to committee members to read at their leisure." And to this I add "the farmer legislator likes to have you visit him at home during the weekend, when you can talk things over."

I think it essential that the legislative agent for a medical society be a continuous representative of the society, either a full time employee or a member-chairman of the legislative committee who continues in office. He should, over a period of time, become recognized as a reliable spokesman for medicine in the capitol and get on to the ways things are done. I am strongly opposed to the employment of a temporary legislative agent. It is possible for a medical society to retain on a temporary basis brilliant and plausible lobbyists, but I am firmly convinced that medicine loses caste and respect by doing it. Whether layman or physician, a society's representative should always have available expert medical people to advise on technical matters or take part in conferences and hearings. Our method of committee operation is highly satisfactory. We have a number of committees made up of members with special training in various fields of medicine. These committees are officially recognized as advisory committees to government agencies. Three such committees serve the state health department in addition to the two physician members of the Public Health Council. Two committees serve the Department of Welfare, one the Personnel Department and one the Rehabilitation Service, and so on. These committees keep constant liaison between the medical society and government departments operating in the medical field. The Medical Examining Board, which is an official agency appointed by the governor on nomination by the society, has been called on for advice and counsel outside the field of medical licensure and often special committees are asked for to do a special job. Each year we find new ways to assist our government with trained and skilful advisory committees. We have the confidence of government. When the National Selective Service Act went into effect in 1940, our governor and the adjutant general asked the society to organize the medical functions of sixty-five local Selective Service boards and we continued to supervise and operate them throughout the war in the closest cooperation with state Selective Service headquarters. The society also organized and operated two induction centers. Last year, after the passage of the G. I. bill, the governor and the commissioner of education delegated to us the approval under the act of all educational institutions related to medicine, such as hospital residencies, *internships and all on the job training programs* for radiologic, laboratory and physical therapy technicians, hospital administrators and public health personnel. With mutually developed relationships like these, antagonism from our state government is unthinkable.

I would classify the desirable characteristics of a legislative agent in this order of importance: First would be integrity, second patience, next would be a liking for and faith in his job, and last, and as important as all, is a broad knowledge of his state. It is a good thing to know the kind of people you have because people make the political atmosphere of a state. They differ, too, from area to area.

The question arises whether physicians should seek election to state legislative bodies for the purpose of furthering the cause of medicine. While I am hardly qualified to enter the discussion, physicians can surely be valuable in state legislatures, but to be most helpful and a credit to medicine they should go as *citizens first* and take with them knowledge and social understanding and not prejudice.

It is my opinion that organized medicine cannot afford to play party politics. Sooner or later it is bound to be unfortunate if a medical society becomes identified closely with any political party. Our cause is great enough and righteous enough to transcend partisanship. Medicine has two special interests in government. The first is to have unhindered opportunity for the public service that only medicine can give, and the second is to have rights of its own, and I believe that rights will be given in direct proportion to the willingness to accept responsibility.

The Responsibility of the Individual Physician

Dr. James C. Sargent, Milwaukee: I know of no group of men who find it so difficult to compromise differences and unite in a common cause as do doctors. The reason is not obscure. From graduation, the average physician remains, above all else, an individualist. His professional responsibilities call for snap judgment, profound in import and of unrelenting finality. Little wonder that he fits poorly into the hem and haw of a conference table. The one way by which an individual physician might best serve his professional organization is to look critically on those who are to lead him and, whenever he finds them earnest, honest and informed, go along. The power of organized medicine rises or falls with those two salient factors good leadership and a loyal, unquestioning following. I have noted that the men who stay long and move up in positions of responsibility in their professional organizations are men who are blessed with a spirit of service and are willing to do hard work. The executive staff of your society may be active and capable; your councils, boards and committees may be well chosen and work hard on policies and program; but in final analysis effectiveness lies largely in the interest and, at times, the actual leg work of the individual physicians making up your society membership.

It is common sport to belittle the intelligence of the lawmakers of our land and beguile even their motives. Yet I am certain that through your association with them in your official duties you have come to know them as usually fair and sound men trying as best they know how to do what is right for the people they are elected to serve.

If ever there was a time when responsibility rested heavily on the individual physician, it is now. Our national association will continue its efforts at meeting issues head on as they arise in Congress. Your state associations will carry on as before, sending well chosen workers into committee hearings of state legislatures. But how much greater the effect would be if only the individual doctors of our land sensed the power that lies in their hands. There is hardly a legislator-elect in the country today who does not have a personal physician who would be welcome in his home and whose opinions he would hear and appreciate. If our lawmakers of tomorrow were to enter on their new task with that sort of background information, I would hold no doubts over the future of American medicine.

Beset by the great effort that is being made to socialize medicine and, preoccupied by an effort to get some sort of a profession-sponsored sickness insurance plan under way, the profession has hardly had the leisure to give much thought to other problems of moment. Let us see what individual physicians are thinking and doing about them. The Veterans Administration, working arm in arm with the medical schools, is well under way with an expanding program of medical care that bodes well to become the largest health movement that America has yet seen. Probably few, if any, would question the extension of that care to any veteran, or to any of his family, sick or disabled from any cause whatever, if he is in genuine need of help. But to expand and extend its facilities to all veterans, regardless of private means and regardless of whether the disability was connected with military service, is another matter. The limited facilities available and the overwhelming load of service connected disabilities are such that little room remains at this time for admissions other than those genuinely deserving such service. But the pattern is already set. As facilities expand and war casualties decrease, the day will come when we shall have acquired, insidiously and unnoticed, a simon pure system of federal medical practice that will put Wagner, Murray and Dingle to shame. Individual physicians have considerable responsibility in that matter.

In our hurried effort to get to the public a sickness insurance sponsored and controlled by the profession, we are already in fair way to create a frankenstein that can be our undoing. If we have an eye to the lessons of history we must look ahead to the likelihood that whatever we conceive in the way of voluntary sickness insurance will in time become compulsory. If this proves to be the case, as it always has heretofore, our efforts will have been useful only in cutting out a pattern that is workable and right for all concerned.

The general theme of our many profession sponsored plans today revolves around two major premises. First, that it be developed for a low income group unable otherwise to provide for their proper care when sick. Second, that professional fees are to be cut—in general about 50 per cent—in line with our age old custom of "trimming the suit to fit the cloth." I can see nothing but good in such a program, even if it ultimately is to acquire the force of governmental compulsion. But if fee schedules are to place the return for professional services on a cut rate basis, it is imperative that service under our plans be limited to income levels deserving such special consideration. An impossible situation presents itself. Surely the profession does not intend to set up an inferior type of medical service to its insured. And surely it does not propose to create a system that lowers by half the general income level of all physicians. Unless, like hospital insurance, it desires to develop a full pay insurance service for rich and poor alike, it must look carefully and soon to the matter of who are and who are not to be considered eligible for a prepayment service plan designed primarily to meet the needs of families too poor to bear the cost of serious illness without it. The full fees of doctors simply cannot be standardized. There is too great a difference between overhead costs and value of services between your state and mine, between urban and rural populations and between general and special practice. These serious differences do not come into play when the welfare of people in genuine need is involved. They never have. But if our prepayment plans do not draw a clear line between those truly in need and those not, we are building a house of cards that will crumble and engulf us.

I should like to say a few words on the responsibility of the full time executive secretary. I am aware that the clear duty of a paid secretary is to serve the council or board that is delegated to manage the affairs of his society. But his responsibility goes far deeper. He is really subservient to the doctors who pay the dues that finance his organization. And there are times when councilors fail to sense the will of the membership at large or think and act in terms of the special interests of the district whence they come. This is especially true in states in which there are one or more large, well organized county societies. I know the power that you have over the councilors and officers whom you serve. Indeed, I conceive your work to include leadership as well as subservience. And if you were to choose the top man among you I know he would have, among other important attributes, a high degree of native leadership. Organized medicine—thanks to the curious independence of the men of which it is made—needs strong guidance from above, and if you would serve as I think you should, you would never hesitate to use the power of your office in organization affairs that clearly are free from controversy and for the good of the cause. With equal vigor you would avoid a partisan attitude during dispute, whatever your personal convictions are, but in its stead throw your weight into compromise for the sake of unity without which your organization will remain sterile and useless. With that kind of leadership and with a profession slowly but surely learning the strength that lies in unity, the doctors and the public that they serve can look to a future fraught with far less of doubt and trepidation.

DISCUSSION

Dr. R. B. Anderson Jr.,[1] Fort Worth, Texas: Dr. Dickinson made the suggestion that, when these reports come back on medical service rendered by physicians in the county medical society areas, the maps be scrutinized by the state secretary and, if it was thought they were overlapping, they do something about it. If I did not misinterpret the material sent to us from the headquarters office, we were directed to ask the county medical societies to send this material directly to the officers of the American Medical Association. In that event there would be no opportunity for state secretaries to do what Dr. Dickinson asked. In Texas we have been attempting for a long time to assemble some of the material asked for in the questions. In order to make our material complete, we did ask county medical societies to make copies of this material and give it to us. So, in some instances, where they are doing that, we are going to get it.

---

[1] Dr. Anderson died January 2.

Dr. Dickinson: I believe that you were asked that, if the county secretaries found that their lines overlapped, you would ask the county secretaries to get together. I thought that a better way was to ask the state secretaries to see to it that there were no overlapping lines. If there are no overlapping lines it is, of course, desirable that it be sent directly here. But I believe it would be better if the material was sent to the state secretary first. Had I known that at the time, I would have suggested it, but I did mention in the communication which was attached to the map that if there were overlapping lines, please ask the secretaries concerned if they would get together and see if they could eliminate that. The method of procedure suggested is as follows: Select a typical week. During that week have the office girls in the physicians' offices in Dallas and Fort Worth compile the number of patients from these doubtful border towns in the overlapping area. Assign these border towns to the Fort Worth medical service area from which more patients during the test week came to the offices of the Fort Worth physicians. Other towns in this overlapping area would be assigned to the Dallas area, if more patients went to Dallas during the test week. That would be a statistical method, simple and, perhaps, definitive by which you could determine where these border towns belonged.

Dr. Taylor: Fort Worth and Dallas aren't the only two medical centers in Texas. We have county societies comprising as many as ten counties and perhaps within the boundary of that area as many as two or three real but small medical centers. That complicates our problem no little.

Dr. Dickinson: I also added that I am asking the University of Illinois Bureau of Business Research to send you a copy of the publication in which they marked off the state of Illinois in retail trading areas. There is no overlapping at any place in it. Although I appreciate that the problem of medical service areas is a different matter in many respects, it might suggest the ways and means by which it could be done. The hardest job is to select the centers of the medical service areas.

Dr. Anderson: Back in the days of the Procurement and Assignment Service, we had very much the problem that you are talking about. In other words, we used our county medical societies as areas to determine how many people they served. We put on the advisory committee in each county medical society the responsibility for determining just how many people the doctors in the county medical society areas served. We believe county medical society committees can do this job better than anybody else. We tried to impress them with that responsibility. Carrying this thing forward into the present status, we have what we call county medical service committees, and they are asked to furnish these data which you have requested. They will be the ones who will set up the population served by the physicians in the county medical society area. We don't doubt but the circle is going to overlap all over Texas because there isn't any other way you can do it. But, when you take the whole picture, you will have something fairly definite to go by.

Chairman Price: We have time for decision on the suggestion made this morning, and that is that we make plans for a committee of our own membership to help make up the program for next year. It has been moved and seconded that such a committee be appointed. Carried.

Dr. Creighton Barker, New Haven, Conn.: I would move that the Chair appoint a nominating committee of three to select such a committee.

Chairman Price: Moved and seconded that the Chair appoint a nominating committee who will, in turn, nominate a committee of three or five, whichever they think best, to work with Dr. Lull in preparing our program for next year. I will appoint Dr. Weld, Mr. Dick Graham and Dr. William Brooksher.

Saturday, December 7, Afternoon

Chairman Price: I am going to ask all of those attending this conference for the first time as editors, secretaries or executive secretaries please to come forward. So, I am going to ask these gentlemen, in turn, to please stand up and face the audience and give your name and your newly acquired position, so we will know who you are and where you are from.

State Medical Associations and Social Security and Federal Income Taxes

Mr. Thomas V. McDavitt, Chicago, read his paper.

DISCUSSION

Dr. Barker: I should like to ask what we are doing about advising our county associations of this tax affair.

Mr. McDavitt: Dr. Barker, I don't regard a ruling, for instance, with respect to the Connecticut State Medical Society as having any particular bearing on the question of a county society's liability. The test is to determine in the light of each society's activities.

Dr. Barker: That is what was in my mind. What I want to do is to direct a question to others here as to what sort of aid and guidance they have given with respect to the finances and the tax status of county associations within their state organizations.

Mr. Richard H. Graham, Oklahoma City: To answer Dr. Barker's question for me in a little more elementary fashion, you say that each county medical society should have established its own status?

Mr. McDavitt: I think particularly if they have any employees connected with the county medical society. I think some of the larger county medical societies, like Wichita or Sedgwick County, Kan., certainly should have a separate status; certainly if you have a large office for Oklahoma County; certainly the five boroughs in New York, several academies in Ohio or Wayne County in Detroit.

Mr. Graham: Do you know if those have been established and what they were?

Mr. McDavitt: Frankly, I would like to have had time to send the questionnaire out to the larger county societies but I didn't have time. I know that Wayne County, Mich., has established some sort of a status.

Dr. Holman Taylor: Isn't it true that the state medical association has no members except those of county medical societies? Isn't it true that the county medical society is the state medical association? Then, how could they be any different and subject to additional taxation in the state association? Years ago our state association sought to establish the right for county medical societies to secure articles of incorporation in spite of the fact that the state medical association was also a corporation. We had considerable difficulty in securing incorporation of county medical societies because of the fact that they were a part of the state medical association. Then, how could they also be made to pay taxes? We got by with it. Most of our county societies are incorporated.

Mr. McDavitt: From the standpoint of medical organization, with one or two exceptions, the state medical societies are separate, incorporated bodies; that is, one group of state medical societies. They are composed, in turn, automatically, of members of their component county units, which, from the standpoint of income taxation, are separate organizations.

Dr. Taylor: They are not separate organizations—county societies.

Mr. McDavitt: Yes, I think they are. You have to take ipso facto, by virtue of the membership in the component societies, the members of the component societies, but the state society is an entirely different, distinct and separate organization from the county societies.

Dr. Taylor: There isn't any state medical association, if your logic is correct, because they are only members of the state medical association.

Mr. McDavitt: Then we haven't any separate American Medical Association by that.

Dr. Taylor: Yes, you have.

DR. BARKER: Isn't the question that comes in here the fact that the county associations have independent income of their own? It does not accrue to the benefit of the state society. That really is the point here, as to whether or not they are liable for income tax.

MR. McDAVITT: It is a separate organization, with separate income.

MR. OLIVER E. EBEL, Kansas: The Internal Revenue Department swooped down on all of our county societies and declared them all taxable overnight. Three or four of them paid income taxes and penalties and back taxes totaling four, five or six thousand dollars in penalties. The reason was that these county societies had made contracts with the boards of social welfare for treating indigent people. Then they became a contracting party, and they paid the individual doctors. Therefore the members of the county society were held to be employees of the county medical society. Therefore the total income of that society inured to the benefit of the individuals, and they were all held taxable.

MR. McDAVITT: Under the income tax act?

MR. EBEL: Yes, on income tax, because both 101 (6) and 101 (7) say that no part of the net earnings must inure to the benefit of members. It had in both of those instances. So these county societies have all caught the fulcrum on the program and have had to rearrange the contracts whereby each individual physician was a separate party to the contract under the social welfare program. That is what they did to us. That left the state society entirely apart. We are still exempt. We had nothing to do with that. They are rearranging the program, but they had to pay penalties and taxes.

MR. W. G. FREY JR., New York: The Medical Society of the County of Queens, Incorporated, one of the five county medical societies in Greater New York, was assessed by the Federal Income Tax Bureau for income tax delinquency on the grounds that we were engaged in lobbying because we had a legislative committee which attempted to influence the legislature in favor of the medical society. An appeal was taken, which was overruled in the first instance, and a second appeal was taken. Finally, on some technicality the medical society was not assessed for income tax. Since then the society has been very careful in its budget not to allot any money to the legislature committee. They get around it, but they are not engaged in lobbying.

MR. GRAHAM: On the basis of this reasoning in Kansas, is there likely to be any ramification of taxation with these agreements that we are making with the Veterans Administration?

MR. McDAVITT: I haven't thought that out. I was trying to confine myself today to state medical societies.

MR. GRAHAM: The courts have peculiar ways of rendering decisions. I can see the possibility of an agreement with the Veterans Administration for payment of fees to members that they may be considering.

MR. McDAVITT: As a matter of practical law here, all the income tax that is going to be levied on you is going to be a certain percentage based on net income. In the Veterans Administration program you are taking 7 per cent for administrative expenses. If you spend all of the 7 per cent for administrative expenses there is no net income is there?

MR. GRAHAM: Certainly, the members are benefiting from the contract.

MR. EBEL: We checked with our attorney on that question. It happens to be an agreement between the medical society and the Veterans Administration, but it is the administration that pays the doctor directly, and the medical society doesn't have the money. So you are exempt under that basis.

DR. P. E. BLACKERBY, Louisville, Ky.: The doctor individually pays that income tax.

DR. W. P. ANDERTON, New York: To avoid that possibility, we formed the Veterans Medical Service Plan of New York, Incorporated. That avoids the trouble of the society taking money from the Veterans Administration.

DR. BARKER: We went very carefully into this in our agreement with the Veterans Administration. We were advised by counsel that it expressly states in our agreement with the Veterans Administration that we are to receive nothing. Furthermore, none of the money paid to physicians by the Veterans Administration under this agreement passes through our hands. It is paid directly to the individual. It is expressly stated in our agreement that we are not to expect or receive recompense.

MR. H. VAN Y. CALDWELL, Cleveland: I can give our experience. Our attorneys advised us not to operate cancer detection clinics or take the money for them, so we set up as a community committee, to operate them.

CHAIRMAN PRICE: As many of the secretaries or executive secretaries as would like a mimeographed copy of this paper, please leave your name and address with Mr. McDavitt. This morning we had a discussion of the state medical society and of the individual physician. Now we will hear a discussion of the county medical society.

The County Medical Society

MR. M. L. MEADORS, Florence, S. C.: In a recent publication of the New York Trust Company it was stated that during the year 1944 more than four billion dollars was expended in connection with medical care in the United States. Medicine it was said has become big business. In this growth in the practice of medicine, to the point where four billion dollars is invested therein by the people of the United States in one year, there possibly has been a tendency to overlook the most important element in the structure of the entire organization—the county medical society. These units, collectively, form the broad base which supports the entire edifice. Yet the county medical society, in some parts of the country at least, has been relegated within recent years to the position of a small social group or scientific essay society. Except in the larger centers of population the medical meetings are attended by a mere handful, the program is devoted to the discussion of papers on some phase of medical practice, and the value of this group from the standpoint of the economics of the profession has been largely overlooked.

The importance of the county society in this respect results from two factors: First, it furnishes the most direct, immediate personal contact not only among the doctors themselves but between the doctors and their friends among the laymen. Through this organization, more than through any other, it is possible for the physicians to reach those outside the profession whom they wish to contact. In brief, the county society is closest to the people. Therefore, and this is the second factor, it is closest to the lawmakers, whether they are members of the city council, the board of county commissioners, the state legislature, or Congress. Every member of Congress lives within the geographic area of some medical society. Within that area, which constitutes his legal residence and wherein his home and closest associates are located, is the place where your Congressman's principal interests lie and where his ear is most acutely attuned to the wishes of the people. In nearly every case some of the doctors themselves are numbered among the lawmakers' closest friends and associates. The county society is by far the most effective medium for reaching the lawmakers. All of the lobbying that can be done by the legislative committee of the state organization, all of the publicity and other means which may be employed, are far less effective than personal contact with the members of the legislature by his constituents in his home community. These are the people who maintain him in office. A personal interview with the representative, preferably in his home town during a recess of the legislative session, will do more toward winning his support of legislation in which the physicians are interested than almost any other means.

With the growing realization of the value of good public relations, the importance of the county medical society as a medium for launching and advancing such a program should not be overlooked. One of the most difficult obstacles in the way of successful public relations is the indifference by the doctors themselves toward the economic phase of their work. It is primarily a problem of education with them, as well as with the public. Undoubtedly the public needs to be educated, but before substantial headway can be made toward education of the public there must be education of the doctors—education as to the need and manner of cultivating public relations. Comparatively little has been done by the profession along the line of directing or shaping the form of legislation. The profession has not been given the opportunity to take an active part, but in large measure the reason why the opportunity has not been extended is that the legislators realize in advance the critical and indifferent attitude of the profession, the feeling by physicians that in attempting to regulate such things the laymen are trespassing on hallowed ground, sacred to the profession itself, and that no cooperation therefore could be expected from the latter. There should be further and rapid development of professional thought along the line that laymen do have a stake in the business of medical care, and in this sense the physicians themselves need further education.

In achieving a somewhat different attitude of the profession to the public, the county society is the very point of beginning. That is the first purpose it may serve. But it can assist actively in the solution of all the problems before us, first, by devoting ample time regularly at its meetings to consideration of the economic phase of medical practice and, second, by participating actively in projects of any local or state agencies which are concerned in any way with preserving or improving the general health and medical care of the people. The time allotted for the purpose at the meeting might be devoted to consideration of a number of subjects. First in importance would be the health needs of the community from which the membership of the society is drawn. Often the tendency is to overlook the needs around our doorstep while attempting to correct the wrongs beyond our reach. An active, energetic interest in conditions which require improvement would go a long way toward impressing local citizens with the profession's sincere interest in the people with whose medical security it is charged. Let the medical society become as actively interested in the community's health as the chamber of commerce is in the community's business. It might be feasible for a county society to attempt to collect and maintain records on the incidence of disease and study together the types most prevalent in the community, to conduct some sort of investigation of its own into possible sources of infection and to advise the municipal or county authorities of any change which a majority of the members of the society believe to be in order.

It has seemed to me that there should be a more direct connection between the county medical society and the department of public health. There is little in common in most communities. Perhaps that is not in most cases the fault of the medical society. The services of a lawyer are at the disposal of the courts for the indigent accused. All the scientific information and knowledge of the doctors in the community should be available to the public health service or to the county and city departments of health, and the latter should be encouraged to make use of them. It is unfortunate for the profession and for the public health service if the people obtain the impression that any degree of antagonism exists between the two groups. The county society can help to dispel it.

There are projects in every state, in every community, concerned in one way or another with the health of the people, and the society can profit greatly if it will give material assistance by identifying itself and becoming actively connected with such projects as are worthy. The public is interested in the welfare of the medical profession and sympathetic with it only to the extent, and so long as the public is convinced, that the profession is interested in the welfare and health of the public. With the increase of specialization, much of the personal touch between the physician and patient has been lost. The practice has come to appear, to many people, more of a business than a profession. The right of the physician to specialize and to limit the hours when he will be available to patients cannot be denied, but he must be resigned to the loss of the enjoyment of a certain measure of the former attitude of implicit faith and sympathy from his patients in exchange for the increased convenience and income derived from the new mode of operation. The effect of the change can be somewhat offset by a real genuine interest in matters which pertain to the health of the people, aside from the service for which they are paying, and by the demonstration of that interest by taking part individually and through your organization in the activities which are designed to increase and improve the standards and availability of medical care.

An illustration of what can be done was a recent experience in South Carolina. The medical college of that state has a long history and splendid background. But it is small and its facilities are very limited. Two years ago a plan was formulated for its expansion requiring a large investment. Despite strenuous effort on the part of the board of trustees and others, the measure which would have provided the appropriation was defeated in the legislature. Then the matter was presented to the South Carolina Medical Association. A committee of seventeen doctors representing all parts of the state was appointed to study the plan. Meetings were held, the college was visited by the committee and its plant and facilities were examined in detail. Then on the recommendation of the committee the plan was adopted and endorsed wholeheartedly by the house of delegates and the committee was enlarged to forty-six to include one doctor from each county medical society. The members of this committee began their activities in their counties weeks before the meeting of the legislature and continued while the bill was under consideration by the lawmakers. Arrangements were made to have the president elect of the state medical association and chairman of the committee address the joint session of the senate and house of representatives immediately before the time fixed for the decisive vote on the bill. The result was that at the 1946 session the bill was passed by an overwhelming majority and carrying an even greater appropriation than had been suggested. It is generally conceded in South Carolina that this was the direct result of the activities of the state medical association acting through the committee composed of members from each county society.

All the activities which might be undertaken should be brought clearly to the attention of the public, particularly those things which have to do with the health and the availability of medical care to the people generally. The accepted mediums are the press and the radio. Other opportunities will be presented from time to time. They are all about us if we will only notice and seize them, opportunities to address various organizations and groups, service clubs, welfare organizations and business and professional groups. The county society is the only logical unit through which many of these things can be arranged, and an alert organization can find the opportunity as often as would be desirable.

Do not make the mistake of thinking that, because you do not hear criticism, it does not exist. One of the advantages in having some one outside the profession associated in this capacity is the fact that people will express their views and criticisms more freely to him than they would to doctors. Prepare to meet criticism, the arguments in favor of regimentation and of reforms contrary to the best interest of the profession by discussing them publicly. You will convince the public of the sincerity and good intentions of the profession, and you will provoke the expression of feelings and arguments from the other side which will enable you more effectively to meet the issue.

Information such as I have referred to, as to the activities, the interest of the profession and medical care for and the health of the public generally is far more effective than vindictive articles and speeches criticizing legislators and all those connected with politics or pressure groups or, on the other hand, devoted to extolling the unlimited virtues of members of the profession and lamenting the passage of the good old days. The national organization has realized fully the necessity of a constructive attitude. The point at which the most effective constructive attitude and action should originate is the county organization and through its members as individuals.

The Cooperative Medical Advertising Bureau

DR. STANLEY B. WELD, Hartford, Conn.: This is the first year that the chairman of the Advisory Committee of the Cooperative Medical Advertising Bureau has rendered a report to the Conference of State Secretaries and Editors. This report is being made in order that each state journal may be fully cognizant of the changes that have transpired in the Bureau during the past four years and may be better informed of the progress of the Bureau.

The Cooperative Medical Advertising Bureau was organized in December 1913 by the Board of Trustees of the American Medical Association on mandate from the House of Delegates. The main purpose of the Bureau was to aid the Council on Pharmacy and Chemistry to effect some sort of rationale in therapeutics by securing advertising conforming to the rules of this Council. Originally twenty two state medical journals were represented by the Bureau, although all had been invited to participate. The membership in the Bureau has now increased to thirty-five journals, which are the official publications of forty-two state medical associations and includes all state owned publications except those of Illinois and New York.

In 1943 dissatisfaction was expressed by several of the member journals in the lack of expression permitted the state journals in the operation of the Bureau and in the limitations placed on the advertising copy by the rules of the Council on Pharmacy and Chemistry. For a year the editor members of the Advisory Committee listened to complaints and commendations from the state journal editors and held meetings of the committee in order to effect certain changes in the management of the Bureau. A new set of operative principles was drawn up calling for a further increase in the size of the committee to eight members. The five elective members were to be editors or business managers of state medical journals, each elective member to be a member of the American Medical Association. An important item in the new operative principles is the appointment by the Board of Trustees of a liaison committee of the Council on Pharmacy and Chemistry to meet with the advisory committee of the Bureau. On March 9, 1945 the committee met with the Council on Pharmacy and Chemistry in an effort to bring to the attention of the Council the desirability of revising the Council's official rules, which had been in operation for forty-one years. This the Council did, and the new rules were published in The Journal early in 1946. These revised rules contain two radical changes, one relating to the subject of "protected" names. The Council has decided to withdraw this rule and to admit multiple names, with the provision that the manufacturer give equal prominence to the common "unprotected" name that is or will be provided. The other change is in the broadening of the Council's attitude toward "advertising to the public," permitting such advertising when it is judged that its dangers are less than its benefits.

In December 1945 the Board of Trustees advised the committee that the administration of the Bureau would be a function of the Board of Trustees on consultation with the elective members of the advisory committee; that member state journals would abide by the accepted principles governing operation of the Bureau.

The real important work of the Bureau is to sell space to national as well as to local accounts, to service the accounts, to distribute copy and plates, to review copy for its acceptability, to handle the financial details of billing, to collect accounts and transmit remittances each month to the journals and to refund surplus monies in December of each year. Virtually all the revenue involved eventually reaches the offices of the journals, minus the appropriation necessary for conducting the Bureau, which amounts to less than 5 per cent of the net sales at the present time. The 25 per cent commission from monthly payments of the Bureau to the journals is for the purpose of establishing a working fund during the Bureau's fiscal year, and it is refunded at the end of each year. No deductions are made by the American Medical Association excepting $2,400 a year for accounting costs. The expenses for Bureau salaries, printing and other necessities are, of course, deducted from the appropriation fund and the Association offers its full facilities in the operation of the Bureau. This is real economy in selling advertising space and, at the same time, it enables the journals to carry national advertising of ethical accounts that otherwise would be difficult to secure without involving a great deal of expense, since the average cost of selling is from 20 to 25 per cent. Basing this on the present net revenue, which hovers round the $600,000 mark, the cost would average from $120,000 to $150,000, whereas the Bureau budget runs slightly over $20,000 a year. Furthermore, the Bureau is in a position to render many additional services, in supplying information of every description obtainable at A. M. A. headquarters. It is essential that the journal offices extend their closest cooperation by answering promptly all inquiries received from the Bureau. It would be well to assign some one in your office to answer these inquiries. The Bureau is endeavoring to secure copy instructions and plates early each month to meet your printing schedules and to send your checks not later than the 15th of the following month.

Standardization is important. Standard colors have been established to enable your printers to handle their work on schedule and to permit the printing of several colors in the same form, thereby reducing printing costs. We should also endeavor to have uniform charges for preferred positions. Another important matter is to permit the Bureau to clear national accounts whenever possible. Some accounts are now divided, part through the Bureau and part on a direct basis. This makes it necessary for the agencies or advertisers to deal with several journal offices in addition to the Bureau, requiring separate billing, renewal of contracts and so on. The Bureau is a part of *your* organization for selling and servicing advertising accounts, and there should be no competitive thought so far as direct sales and Bureau sales are concerned. Frequently agencies send space orders directly to the journals by mistake and they are retained by the journals; then, when copy instructions come through the Bureau, it becomes confusing to all concerned. May I emphasize again that the closest cooperation should be maintained.

In closing, may I remind you that only as you maintain a high editorial standard for your journal and endeavor to improve the format, the content and the technical printed product will you appeal to the reader and to the advertiser. If we can offer to our advertisers an excellent journal in every state the success of the Cooperative Medical Advertising Bureau will be enhanced. We have been enjoying an all time high in state journal advertising. It cannot be expected to continue without an effort on our part to supply in return a product worth every nickel our advertisers invest in us.

Mr. A. J. Jackson, Director, Cooperative Medical Advertising Bureau: I have prepared a chart which shows the progress made in revenue, beginning in 1918 to the end of this year, an increase of about 1,500 per cent from its inception. Practically all of that money is distributed to the state journals.

The Medical Profession and Public Relations

Mr. Charles M. Swart, Chicago: It is seldom that a public relations man has the opportunity accorded me by the American Medical Association in my first two weeks in headquarters —the opportunity of meeting and talking with the people who are close to the points of contact at which public relations are made. Public relations are the sum total of private relations. The relations which the individual physician has with his patients, with other professions, organizations and occupations, and with his community are the basic elements of public relations of the medical profession. The relations which the county medical society has with its community set the tone which will largely characterize the relations of the profession and the state and national associations in that community. The relations which the state association has with all the elements of public opinion in its commonwealth is more potent than anything a national organization can do to affect public opinion in that state. Recognizing this, your national association is planning a large part of its public relations program around the cooperation of the state and county organizations. One of the first things that we hope to do is to establish a direct line of communication between the national headquarters and the officials of the state and county organizations. This will be in the form of a periodic news letter from the general secretary to key officers and physicians throughout the country —designed to keep you abreast of work in progress at 535 North Dearborn Street—work which is being done in the interest of the profession and the health and welfare of the public.

By the same token I want to ask each one of you to take the personal responsibility of keeping our office informed as to what is going on in your state and county organizations: anything that bears on public relations, any programs that you are initiating or operating which promise to bring results, any problems which you have which we might help you to think out or solve.

Just as the American Medical Association cannot work alone to improve the public relations of the medical profession in the nation as a whole, so the state and county societies cannot work alone in their respective communities and expect to reach their goals successfully.

The medical profession sometimes finds the public hostile, unsympathetic or indifferent to its problems. Because the men who make up the medical profession are of good will, intelligent and dedicated to service of humanity, it is frustrating to find other community leaders hostile, unsympathetic or indifferent, especially when we know that these people do not understand the basic elements of the problem and its proposed solution. But we can have the wit to win. We can take them into the ranks of our supporters and allies by creating opportunities to call on them for consultation and cooperation. Each county and state association can study the health problems and hazards of its own community.. Each can select a specific issue. Each can form a temporary committee of doctors interested in the various aspects of that problem—a committee which will control the medical aspects of any program to solve the problem. Then, the community leaders can be called in, the men and women who lead, direct and mold public opinion. We can work with these people and through this contact get them to know and understand our problems, our methods and our goals. There is nothing as potent as participation to win respect and support.

The medical profession is sincere in its efforts to safeguard the health of the nation. Individually and collectively, medical men have been demonstrating their sincerity through advances in medical education, science, drugs and treatment procedures, and through individual devotion to duty. Unfortunately for the medical profession but disastrously for the public welfare, there are numerous people willing to follow those who would discredit the sincerity of the medical profession. The only way to combat such false leadership is to provide good leadership—to give the community leaders an opportunity to participate under medical leadership in convincing demonstrations of our sincerity of purpose. That is public relations in action. I want to comment on the instruments of publicity and public relations—newspapers, the radio, pamphlets, posters, exhibits, movies and speakers. A news release on the front page of the paper contributes nothing to your public relations. until it is read and creates an attitude. A radio program is a total loss to public relations until thousands of listeners tune it in and hear and believe in its message.

Your national association has plans, which are rapidly becoming active, to provide the heavy artillery of publicity and public relations in all of the national mediums and to supplement your efforts in the local areas. It is our job in the national office to prepare the way and to give all the support to the effort that our resources can afford—but the medical profession cannot take and hold the ground of improved public relations without the complete devotion and cooperation of the state and county societies which are out on the firing line where public opinion is made.

My association with the medical profession has been lifelong. I am looking forward to the day when I come out to meet you on your home grounds, to know you personally and your public relations problems intimately. Until then, let's keep in touch with one another.

CHAIRMAN PRICE: I am going to call on the chairman of our nominating committee to nominate the committee which will work with Dr. Lull in presenting our program next year.

DR. STANLEY B. WELD, Hartford, Conn.: For chairman, Mr. Theodore Wiprud of the District of Columbia Society; and on the committee with him, Mr. Harvey T. Sethman of Colorado State Medical Society, Dr. Douglas L. Cannon of the Alabama Association, Dr. Dwight Wilbur of the California society and Dr. Jonathan Forman of the Ohio State Medical Association.

SATURDAY, DECEMBER 7, DINNER SESSION

DR. E. G. JOHNSON, President, Nebraska Medical Society: Dr. Arthur L. Miller of Kimball, Neb., is the representative from my district, the Fourth Congressional District. He has had long experience in medicine and later served as Director of Public Health of the state of Nebraska and president of the Nebraska State Medical Association.

What's Ahead for the 80th Congress?

HON. A. L. MILLER, Kimball, Neb.: The new Congress will have the job of deflating the overstuffed Frankenstein, bureaucratic monstrosity of government which for the past twelve years has been trying to regulate everything from your shoe strings to your hair tonic.

One needs but review the results of the November election to realize that the Communists, the left wingers and those advocating more government controls received a severe set back.

There were 30 members in the last Congress who consistently voted for more government controls and regimentation of the American people. They were defeated.

There will be 102 new faces in the House of Representatives in this Congress. In reviewing the political campaign literature of this group, one is convinced that at least 90 per cent of the new members believe that the people are tired and fed up with regulations and controls. They have had enough of being pushed around by their government. The people want less government in business. They want less bureaucracy, regimentation, communism and controls. It means that the socialization of America and the radical Political Action Committee's legislative program suggested to the 79th Congress, if proposed, will be thrown into the ash can. The election was not so much a Republican success as it was an American victory.

See how bureaucracy has grown. In 1933 it required but 533,000 federal employees to run the government, at a cost of a billion dollars. Our national debt at that time was 16 billion dollars. In 1939 there were 933,000 federal employees, which cost 3 billion dollars in salaries. Our federal debt at that time was 60 billion dollars. Today there is something over 2,300,000 on the federal payroll, which cost 8 billion dollars to maintain. The federal debt is 260 billion dollars.

Senator Byrd of Virginia, in a recent report, said there were 1,141 various government agencies and commissions. There are 32 dealing with housing, 37 with foreign trade, 93 lending the people's money, 26 dealing with health, and 15 have their finger in the sugar pie. He states that these agencies have issued 107,980 regulations, which have the full force and effect of law without the approval of Congress.

The Congress will take definite steps to throw the Communists off the payroll of government. One needs but to read the statements of Attorney General Clark and J. Edgar Hoover to realize that the virus of communism has been slowly soaking into our circulation. Communists have connived and worked their way into policy forming jobs in government. There is no question but that it is a blue hued cancerous growth which must be eradicated from our body politics.

Legislation affecting labor, industry and the public will have high priority in the next Congress. In my opinion legislation will be adopted which will make labor and industry responsible for their contracts; legislation which will outlaw secondary boycotts, sympathy strikes and jurisdictional disputes. Present labor laws will come in for some revision. The legislation adopted will be in the interest of the public and not weighted on the side of labor or industry.

The 80th Congress will be an American Congress. It will have great powers and responsibilities. It will take steps to restore constitutional government, which, in the past, has permitted the individual with ingenuity, imagination and initiative to penetrate the new horizons of the future. The Congress will give new force and direction to those inventions, discoveries and technics which hold the key and are an integral part of our nation's growth. Man's ingenuity, under free enterprise in the past, has had no limits. We cannot have a free and hopeful people if they are dragged down by debt and the tax collector. We cannot have freedom in the slavery of a host of government restrictions. We cannot continue to smother the opportunities of small people by a big government, big strikes, big political monopolies, big scarcities and big blunders.

Now as to medical legislation: We shall probably have another Murray-Wagner-Dingell bill. It will be greatly modified. It may resemble some provisions of the Taft-Smith bill. We shall undoubtedly deal with bills relating to cancer and the continuation of some emergency maternal health program. I do feel, however, that no radical socialized medicine bill will have any chance in the present Congress.

May I suggest that the Secretaries have a job of selling good medicine to the country. It does seem to me that we must keep up a good public relations program through the paper, radio and forum discussions. I am convinced that the Secretaries and medical men must lead the parade in helping to mold and shape public opinion.

(To be continued)

Washington Letter

(From a Special Correspondent)

Feb. 20, 1947.

Administration Revives Demands for Nationwide Health Insurance

Introduction of the Taft medical care bill in the Senate was followed by revived administration demands for a nationwide health insurance program. In its eleventh report to Congress, the Social Security Board called for a health insurance program backed by contributions from workers and employers, similar to those for old age benefits. The board attacked the "free treatment" principle, declaring that most normally self supporting persons prefer to have a system of prepaid medical care rather than to have to seek free care when reduced to dependency. President Truman in his state of the union message rejected charity methods and called for a national health program as one of the most important items in his whole social welfare plan. The board denied that its program, which contains numerous other welfare provisions, is "socialized medicine," but claims rather that it is a method of "insurance payment."

Shortages of Doctors, Nurses and Hospitals

In his annual report for 1946, Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service, declared that "there are not nearly enough physicians, dentists, nurses and other health personnel to go around, nor enough hospital beds and clinics to take care of our minimum needs." Many areas have no doctors or health facilities. He declared that the last frontiers of public health were to conquer the diseases of advancing years and to extend health services to the entire population. He said: "We have yet to solve the economic problems of medical care. We have yet to make it possible for every one, regardless of income, to obtain the basic services needed for the protection of his own health and that of his neighbors. These are our basic objectives for the future."

Public Health Service Seeks Fifty Million Dollars to Start Hospital Construction

Congress will be asked by the U. S. Public Health Service for 50 million dollars to start construction of hospitals under the five-year, $1,125 million federal-state hospital building program authorized by the last Congress. Surgeon General Thomas Parran has issued regulations under which states, local governments or nonprofit institutions may collect $1 in federal funds for every $2 of local money spent on new construction. The seventy-ninth Congress appropriated $2,350,000 to assist states in surveying their needs and authorized annual appropriations of 75 million dollars for construction.

Uncle Sam Profits from Sex Hormone Factory

Donald C. Cook, director of the Office of Alien Property, revealed to the Senate Civil Service Committee that Uncle Sam is making money as owner of a male-and female sex hormone factory, the Schering Corporation, headed by Frank C. Brown. Mr. Cook said the property gives the United States government a 10 million dollar annual income as against a 4 million dollar administrative cost. The plant is alien property seized during the war.

Mine Operators Term Lewis Health and Welfare Fund "Economic Blackmail"

Spokesmen for United States coal mine operators told Congress that they would not pay the John L. Lewis tonnage royalty for the United Mine Workers' health and welfare fund even if it meant another strike, because the levy is "economic blackmail." Forney Johnstone, counsel for the National Coal Association, said that "Congress should understand that a large proportion of the coal industry, if not the entire industry, on relinquishment of federal control, cannot agree voluntarily to a collective pooling of the mine labor of two thousand unrelated mines for the levy of a tonnage tax by the mine workers for any such blind pool." The association is not asking Congress to declare such benefits illegal if agreed to in "wholly voluntary contracts" but does ask that operators "not be coerced with the sanction of Congress."

Proposed Erection of Betatrons for Treatment of Cancer

The U. S. Bureau of Standards has announced that plans are completed for construction of two betatrons which will make Washington the national center for testing x-ray equipment. Other functions of the betatrons will be the treatment of cancer and the protection of x-ray technicians. The announcement stated that, as a medical tool, the betatron can provide x-rays suitable for cancer treatment under conditions long dreamed of but never before realized.

Plans Approved for Veterans Hospital in Arlington

Plans for the seven hundred and fifty bed veterans' hospital to be erected in Arlington, Va., have been approved by Veterans Administration medical and construction chiefs. The hospital will be nine and a half stories high but will not compete with the beauty of the Lincoln Memorial across the river. The structure will enable two thirds of its occupants to view the United States capital. The hospital will not be ready for twenty-seven months.

Supply of Physicians in Washington

The Medical Society of the District of Columbia reports that Washington has an estimated 1,500 physicians in active practice in the metropolitan area, or about one physician to 900 persons. The safety ratio is about one doctor to a thousand of population. Executive Secretary Wiprud also reports that the office space problem is almost solved, except in the downtown area.

Coming Medical Meetings

Alabama, Medical Association of the State of, Birmingham, April 15-17. Dr. Douglas L. Cannon, 519 Dexter Ave., Montgomery 4, Secretary.

American Academy of Pediatrics, Pittsburgh, Feb. 24-27. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Association of Anatomists, Montreal, Canada, April 3-5. Dr. Normand L. Hoerr, 2109 Adelbert Road, Cleveland 6, Secretary.

American Association for the Study of Goiter, Atlanta, Ga., April 3-5. Dr. Thomas C. Davison, 478 Peachtree St., N. E., Atlanta 3, Secretary.

American Otorhinologic Society for the Advancement of Plastic and Reconstructive Surgery, New York, February 27. Dr. Norman N. Smith, 291 Whitney Ave., New Haven 11, Secretary.

Arkansas Medical Society, Little Rock, April 17-19. Dr. William R. Brocksher, 602 Garrison Ave., Fort Smith, Secretary.

Chicago Medical Society Annual Clinical Conference, Chicago, March 4-7. Dr. Willard O. Thompson, 30 N. Michigan Blvd., Chicago 2, Secretary.

Dallas Southern Clinical Society, Dallas, Texas, March 17-20. Dr. Glenn D. Earlson, 1133 Medical Arts Bldg., Dallas, Secretary.

Iowa State Medical Society, Des Moines, April 16-18. Dr. John C. Parsons, 406 Sixth Ave., Des Moines 9, Secretary.

Michigan Postgraduate Clinical Conference, Detroit, Book-Cadillac Hotel, March 12-14. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

Missouri State Medical Association, Kansas City, March 30-April 2. Mr. Thomas R. O'Brien, 634 N. Grand Blvd., St. Louis 3, Executive Secretary.

New Orleans Graduate Medical Assembly, New Orleans, Feb. 24-27. Dr. Max M. Green, 1430 Tulane Avenue, New Orleans 13, Secretary.

Northern Tri-State Medical Association, Detroit, April 8. Dr. John L. Stifel, 232 Michigan St., Toledo 2, Ohio, Secretary.

Pacific Coast Surgical Association, Seattle, Feb. 17-18; Victoria, B. C., Feb. 19-21. Dr. F. L. Reichert, Stanford University Hospital, San Francisco, Secretary.

Southwest Allergy Forum, Shreveport, La., March 31-April 1. Dr. Sim Hulsey, 505 Medical Arts Bldg., Fort Worth, Texas, Secretary.

Tennessee State Medical Association, Memphis, April 8-10. Dr. W. M. Hardy, 706 Church St., Nashville 3, Secretary.

Medical Legislation

MEDICAL BILLS IN CONGRESS

National Science Foundation

The creation of a **National Science Foundation** is proposed by S. 526, introduced by Senator Smith, New Jersey, for himself and Senator Cordon, Oregon, Senator Revercomb, West Virginia, Senator Saltonstall, Massachusetts, Senator Magnuson, Washington, and Senator Fulbright, Arkansas. There will be forty-eight members of the foundation to be appointed by the President, who is requested in making appointments to give due consideration to any recommendations submitted to him by the National Academy of Sciences or by any other scientific or educational organizations. The foundation will have a chief executive officer, to be known as the director of the foundation, and he will be appointed by its executive committee, with the approval of a majority of the members of the foundation. Within the foundation there will be a division of national defense, a division of medical research, which will administer programs of the foundation relating to research in the medical sciences, a division of mathematical, physical and engineering sciences, a division of biological sciences and a division of scientific personnel and education.

Another bill has been introduced in the Senate proposing to create a **National Science Foundation,** S. 525, by Senator Thomas, Utah.

National Health Act

Senator Taft, Ohio, for himself and Senator Smith, New Jersey, Senator Ball, Minnesota, and Senator Donnell, Missouri, introduced S. 545, a bill proposing to enact the **"National Health Act of 1947."** A discussion of this bill was published as an editorial in The Journal, February 15.

Department of Health, Education and Security

The Senate Committee on Expenditures in the Executive Departments has announced that a ***preliminary hearing*** will be held on the **Fulbright-Taft bill, S. 140,** on February 28. The hearing, it is understood, will be preliminary in nature only and the committee will thereafter determine whether additional hearings are to be held.

Miscellaneous

A bill introduced by Representative Rees, Kansas, H. R. 1714, proposes to exclude certain interns, student nurses and other student-employees of hospitals of the federal government from the classification act and other laws relating to **compensation and benefits of federal employees.**

The federal security administrator would be authorized by S. 497, introduced by Senator Langer, North Dakota, to make **loans to institutions** for the purpose of financing the construction of domiciliary facilities for the aged and the blind.

Representative Boggs, Louisiana, proposes by H. R. 1811 to provide **dispensary treatment and hospitalization** in army and navy hospitals for retired enlisted men of the Army, Navy, Marine Corps and Coast Guard.

H. R. 1438, introduced by Representative Cellar, New York, proposes to bring within the purview of the **Social Security Act** employment in nonproprietary hospitals.

STATE LEGISLATION

California

Bills Introduced.—A. 1034, to amend the business and professions code, proposes that the trained attendants shall have three months, rather than one year practical experience in a reputable hospital or sanatorium. A. 1057 and S. 485, to amend the business and professions code, propose the creation of a **Board of Examiners of Trained Attendants** and define the acts which trained attendants may perform. A. 1078, to amend the health and safety code, proposes a law for the licensing, inspection, regulation and supervision of **public and private hospitals** within the state. A. 1205, to amend the business and professions code, proposes to authorize the issuance of an **herb practitioner's certificate** and to authorize the Board of Medical Examiners to establish standards, qualifications and procedure for the licensing of such practitioners. S. 511, to amend the health and safety code, proposes that any physician performing a ***postmortem examination*** for a coroner shall be a physician and surgeon trained in pathology. S. 512, to amend the health and safety code relating to standards of hospitals operated by local hospital districts, proposes that such **hospitals shall maintain minimum standards** established and promulgated by the Council on Medical Education and Hospitals of the American Medical Association or by the American College of Surgeons. S. 539, to amend the business and professions code, proposes to **require all practitioners of medicine,** on written request from a person he has attended in his professional capacity or from some duly authorized representative, to execute and issue a certificate of the facts of illness, injury, death or other facts concerning the patient.

Connecticut

Bills Introduced.—H. 381, to amend the **law relating to naturopathy,** proposes to prohibit the issuance of licenses to practice naturopathy in Connecticut simply on the basis of licensure in another state without the applicant meeting the qualifications set forth by the Connecticut law. H. 392, to amend the **law relating to medicine and surgery,** proposes that persons practicing the massage method or Swedish movement method be no longer exempt from the medical practice act. S. 64 proposes to add **thyroid** to the list of drugs which may be sold only on a written prescription *signed by a member of the medical, dental or veterinary profession* licensed by law to administer such drug. S. 133, to amend the **law relating to osteopathy,** proposes to establish higher minimum requirements and more rigid supervision of the practice of osteopathy in the state.

Idaho

Bills Introduced.—H. 141 proposes to add **cancer** to the list of diseases which a physician must immediately report to the department of public health. H. 141 proposes to limit the sale of **barbituric acid** or compounds to sale on a prescription signed by a person licensed to prescribe and administer barbiturates. S. 57 proposes an act to require the **licensing,** inspecting and regulating of all **hospitals** within the state. S. 67 proposes the enactment of a physiotherapy-naturopathic practice act and the creation of a **state board of physiotherapy and naturopathy examiners.** Under the proposal naturopathy would include physiotherapy and massage, and the practice of naturopathy is defined as including "diagnosis, and the employment of botanicals, diets, dietary adjuvants and organic substances used in the correction of functional disabilities and faulty blood chemistry, electrotherapy, hydrotherapy and physical therapy, and manual manipulations. It does not include the practice of obstetrics or surgery that penetrates subcutaneous tissues of the body, or the use of the hypodermic needle for injection purposes, manufactured chemical medicines, narcotics and opiates as defined in the Federal Narcotics Act, radium or x-rays for treatment." The practice of physiotherapy "includes physiotherapeutic modalities now recognized or which may be developed and become recognized through use, and the employment of dietary adjuvants, hydrotherapy and manual manipulations. It does not include diagnosis, the practice of obstetrics or surgery that penetrates subcutaneous tissues of the body, or the use of the hypodermic needle for injection purposes, manufactured chemical medicines, narcotics and opiates as defined in the Federal Narcotics Act, radium or x-rays for treatment." The practice of massage "includes the use of the hands as a means for the correction of any physical disability, and the employment of dietary adjuvants and bulk diet as part of a recognized method of physical conditioning, hydrotherapy with the exception of irrigations, and manual manipulations. It does not include diagnosis, the practice of obstetrics or surgery that penetrates subcutaneous tissues of the body, or the use of the hypodermic needle for injunction purposes, manufactured chemical medicines, narcotics or opiates as defined in the Federal Narcotics Act, radium or x-rays for treatment."

Indiana

Bill Introduced.—H. 174 proposes the creation of a **state board of chiropractic examiners** and defines chiropractic to be "the science of locating and the removing of nerve interference according to chiropractic principles."

Bill Pased.—S. 1, to amend the law relating to **hospital surveys,** passed the senate January 27. It proposes to appoint the state board of health as the state agency to coöperate with the federal government in the construction of hospitals within the state and proposes to add to the hospital survey law a new section defining the terms "hospital," "public health center" and "nonprofit hospital."

Kansas

Bills Introduced.—H. 67 proposes the enactment of a law providing for the licensing, inspection and regulation of **hospitals** and the appointment of a hospital advisory council. H. 102 proposes to require all persons applying for a **marriage license** to present a certificate signed by a physician legally qualified under the laws of the state of Kansas or of the state in which he is practicing that the applicant is not infected with syphilis in such a stage as to make it communicable to a marital partner. H. 115 proposes to require **all physicians to report** to the state board of health within five days the name, age and address of every person diagnosed as a case of epilepsy or similar disorders characterized by lapses of consciousness.

Maryland

Bills Introduced.—H. 148, to amend the **law relating to marriage,** proposes that applicants for a marriage license shall produce a certificate signed by a duly licensed physician showing that the applicant is *not* infected with syphilis in a stage whereby it may become communicable. S. 162 proposes to require physicians, osteopaths and other professional workers to **renew their licenses** annually by payment of a $10 annual registration fee.

Montana

Bills Introduced.—H. 149 proposes a law for the establishment of a Montana cash sickness and disability **compensation system.** H. 235 proposes a law for the licensing and regulating of **hospitals** within the state. H. 236 proposes the enactment of a Montana Hospital Survey and Construction Act requiring a **survey of hospital and health facilities** in the state, a program of construction for additional needed facilities, the appointment of an advisory hospital council and the necessary cooperation for the receiving of federal funds to aid in the construction of such additional needed facilities as the program may require.

New Mexico

Bills Introduced.—H. 45 proposes to require all applicants for a **marriage license** *to present a certificate from a* physician and surgeon duly licensed to practice medicine and surgery in the state of New Mexico showing that such applicant is not, in the opinion of the physician, infected with syphilis in such a stage that it may become communicable to the marriage partner. S. 74 proposes to require the licensing, inspection and regulation of **hospitals** and related institutions within the state.

New York

Bills Introduced.—A. 801, to amend the public health law, proposes to require every physician to give immediate notice to the health officer of every case of **infantile paralysis** under his care. A. 861, to amend the law relating to the issuance of **marriage licenses**, proposes to require every applicant to submit a statement from a physician showing that a chest x-ray examination and laboratory tests for the discovery of tuberculosis have been made and that the applicant is not suffering from tuberculosis in a communicable stage. A. 1036, to amend the education law proposes to prohibit physicians from **advertising in newspapers.**

Oregon

Bills Introduced.—S 77 proposes the repeal of existing laws requiring the **licensing of maternity hospitals** and certain other types of institutions and sanatoriums and the enactment of a new law requiring the licensing, inspecting and regulating of all hospitals and related institutions within the state. S. 189 proposes to increase the **annual registration fee of** physicians from $5 to $10.

Rhode Island

Bill Introduced.—H. 612 proposes the enactment of a hospital survey and construction act requiring a **survey of hospital facilities** in the state and the preparation of a program for the construction of additional needed facilities. The proposal would also require the appointment of an advisory hospital council and would authorize the director of the state department of health to apply to the Surgeon General for federal funds to assist in either the survey or the construction of new facilities.

South Dakota

Bill Introduced.—H. 50 proposes the enactment of a South Dakota Hospital Survey and Construction Act requiring a survey of existing hospital facilities and a program for the construction of necessary additional facilities. It also proposes to provide compliance with the requirements of the federal hospital survey and construction act.

Bill Passed.—H. 18 passed the House January 29. It proposes rules and regulations for the licensing of **chiropractic hospitals,** sanatoriums or related institutions by the board of chiropractic examiners.

Bill Enacted.—S. 32 was approved Jan. 24, 1947. It provides that any person who served in World War II and received an honorable discharge therefrom, and who at the time of induction was a regularly licensed practitioner of a profession in the state, and whose status as such practitioner was lost during the time he was in service, **shall be restored and reinstated** to the status held at the time of his induction without requiring him to submit to any examination therefor.

Tennessee

Bills Introduced.—H. 232 proposes the enactment of a law providing for the regulating and **licensing of all hospitals** within the state. H. 234 proposes the enactment of a **"State Licensing Board for the Healing Arts"** and defines healing art as "offering or undertaking to diagnose, treat, operate on or prescribe for any human pain, injury, disease, deformity or physical or mental condition." Any person desiring to practice any specific branch of the healing art would be required to obtain a license from this new board after having passed the specific examination required of the specific examining board. H. 235 proposes the enactment of a **state hospital survey** and construction act requiring a survey of existing hospitals and a program for the construction of needed additional facilities. The proposal also provides for compliance with the requirements of the federal hospital survey and construction act and regulations thereunder.

Texas

Bills Introduced.—H. 160, to amend the medical practice act and a complementary section of the penal code proposes to exempt therefrom **naturopathic physicians,** duly licensed under the laws of the state, who confine their practice to naturopathy as defined by the statutes. H. 225 proposes to limit the sale of paregoric to prescription of a physician duly licensed to practice medicine in the state. S. 79 proposes the creation of a Texas **Board of Chiropractic Examiners** and defines chiropractic to be "the employment of objective or subjective means, without use of drugs or surgery, for the purpose of ascertaining the alinement of the vertebrae of the human spine, and the practice of adjusting the vertebrae by hand to correct any subluxation or misalinement thereof." S. 115, to amend the medical practice act, proposes to eliminate provisions which might be interpreted as relating to **cult practitioners** and to make certain other changes. S. 120, to amend the penal code, proposes to make it unlawful for any physician or other practitioner of the art of healing to **advertise special skills,** definite prices or the use of superior qualities of medicine, material, devices, etc., in the performance of professional service.

Utah

Bills Introduced.—H. 152 proposes the enactment of a **basic science law,** the basic sciences being stated as anatomy, physiology, pathology, bacteriology and chemistry. S. 151 proposes the enactment of a **state hospital survey** and construction act requiring a survey of all hospital and public health center facilities in the state and of the preparation of a program for the construction of additional needed facilities. The proposal would require the appointment of an advisory hospital council and would authorize the commissioner of the state department of health to apply for federal funds for assistance in either the survey or the construction program.

Virginia

Bills Enacted.—S. 27-X has become chapter 15 of the Laws of 1947. It provides a **hospital licensing and inspecting law** but exempts therefrom hospitals operated *for the practice of the religious tenets* of any church in the ministration to the sick and suffering by mental or spiritual means without the use of any drug or material remedy, provided the statutes or regulations on sanitation are complied with. S. 28-X has become chapter 14 of the Laws of 1947. It provides for the establishment within the Department of Health of a **Division of Hospital Survey** and Construction to make a survey of existing hospitals, develop a state plan for the construction of nonprofit hospitals in the state, etc. The new law provides for the appointment of a hospital advisory council and authorizes the commissioner of the state department of health to apply for federal funds to assist in carrying out the survey and planning activities contemplated by the law and to receive federal funds on behalf of applicants and transmit them to such applicants. S. 31-X has become chapter 16 of the Laws of 1947. It provides a **hospital licensing law** for hospitals caring for insane, epileptic or feebleminded persons or persons addicted to the intemperate use of narcotic drugs, alcohol or other stimulants.

Washington

***Bills Introduced.**—H. 57 proposes the creation of* **basic science examining committees** for the practice of medicine and surgery, osteopathy, osteopathy and surgery, chiropractic and drugless therapeutics. The duty of each basic science examining committee would be to conduct and assist in conducting examinations in the basic sciences of all persons applying for licenses or certificates to practice the particular profession for which a license is sought. H. 77 proposes the creation of an examining board for **the practice of massotherapy** and defines massotherapy as "the method, art or science of treating the human body for hygienic or remedial purposes to maintain health and to establish a normal condition of the body, and shall include all massage manipulations, passive and active remedial gymnastics and relaxing movements and manipulations with the hands or with any other agency or instrumentality designed to accomplish massage manipulations or gymnastics to promote physiological action to bring about a normal condition of health and restore bodily functions to a normal condition." The proposal also provides for supplemental licenses to practice hydrotherapy and physical therapy. S. 78 proposes the creation of a state **board of naturopathic examiners** and defines naturopathy as the practice and procedure taught and recognized by regular schools or colleges of naturopathy recognized by the Washington State Naturopathic Association, Inc.

West Virginia

***Bills Introduced.**—H. 81, to amend the law relating to medical and* hospital service corporations, proposes to authorize such corporations to **promote and encourage reciprocity with** similar plans both within and without the state. S. 188, to amend the medical practice act section relating to exemptions therefrom, proposes to exempt from the provisions of the act persons practicing the **religious tenets of the church** in the ministration to the sick or suffering by mental or spiritual means.

Bill Passed.—H. 50 passed the House January 31. It proposes regulations for the supervision and **management of state institutions** for the care of persons suffering from tuberculosis and proposes to make it mandatory for every physician practicing in the state to report in writing to the board of control the name, age, sex, race, home address and type of disease of every person having tuberculosis who comes under his observation or care, within forty-eight hours after the discovery of this condition.

Wisconsin

Bills Introduced.—S. 60, to amend the law relating to **scientific experimentation and** research, purposes that animals may be used for scientific experimentation and research if not subjected to cruelty or torture. S. 104 proposes regulations for the licensing, inspecting and regulating **hospitals** within the state. S. 105 proposes the enactment of a **state hospital survey** and construction act, requiring a survey of hospitals and health facilities in the state and the preparation of a program for the construction of additional needed facilities. The proposal would require the appointment of an advisory hospital council and would authorize the state board of health to apply for and receive federal funds to assist in such survey or construction program.

Wyoming

Bills Introduced.—H. 63 proposes amendments to the medical practice act which would require the appointment of **an osteopath on the examining board** and the licensing of applicants to practice osteopathy, which is defined to mean "the treatment of human ailments, diseases or infirmities by mechanotherapy, or by any means or method other than surgery or drugs." The amendments also would permit use of the injunctive process to restrain the unlicensed practice of medicine, surgery or osteopathy. H. 74 proposes the creation of a **board of naturopathic examiners.** Section 4 would provide "The Definition of Naturopathy shall be as approved by an Act of Congress, Feb. 27, 1929, and including any and all rulings of the Supreme Court or Attorney General hereafter, which hereafter shall comprehend and embrace and be composed of the following act and practices and usages of the physiological and mechanical and material sciences of healing, as follows: Iridology, diagnosis and the practice of physiological, mechanical and material sciences of healing; the physiological and mechanical sciences, such as the mechanotherapy, articular manipulation, corrective and orthopedic gymnastics, naturotherapy, psychotherapy, hydro-therapy and mineral baths, electrotherapy, thermotherapy, radiotherapy, phototherapy, chromotherapy, vibrotherapy, thalamotherapy and orificial dilation and other stimulation of the sympathetic nervous system through the orifices, and dietetics, which shall include the use of foods of such biochemical tissue building products and cell salts as are found in the normal body; and the use of vegetal oils and dehydrated and pulverized fruits, flowers, seeds, barks, herbs, roots and vegetables uncompounded and used in their natural state; and herein to include the practice of such other sciences as the practice of obstetrics and minor surgery in accordance with the teachings in the Naturopathic Schools and

GOVERNMENT SERVICES

ARMY

PACIFIC MOSQUITOES REACH THIS COUNTRY IN TIRES

In a routine Public Health Service quarantine inspection of a cargo ship arriving at Los Angeles from New Guinea, a sanitary inspector discovered that mosquitoes had been breeding in fresh water contained in about half of the nearly 9,000 tires which were being returned to the United States from combat areas. The tires contained water varying in amount from one cup to five gallons per tire and it was estimated that the average tire examined containing water contained also from twenty to thirty larvae. Some of the mosquitoes were the kind that carry dengue fever and filariasis in their native Pacific Islands. The ship before docking was thoroughly sprayed with freon-pyrethrum aerosol, and later many dead adult mosquitoes were found. In eleven subsequent shipments of tires water was found in eight and mosquitoes were found breeding in three of the shipments. All material which contained water, it is reported, was routinely treated with a mosquito destroying solution.

SURVEY OF FOOD NEEDS OF JAPAN

The War Department announced on January 23 that a mission comprising seven members would leave the United States for Japan about February 1 to study the needs for civilian feeding of Japan, Korea and Ryukyus for food exports from the United States. Heading the group is Col. Raymond L. Harrison, Department of Agriculture; other members are Capt. Tracy B. Kittredge, U.S.N., detailed from the Office of the Secretary of the Navy to the Office of the Secretary of War; Mr. Nathan Koenig, executive assistant to the Secretary of Agriculture; Mr. Kenneth B. Jacob, principal chemist, department of Agriculture; Mr. Roswell H. Whitman, associate chief, Division of Japanese-Korean Economic Affairs, Department of State; W. Hallam Tuck, consultant to the Secretary of War, and Col. Joseph W. Scobey, chief, International Branch, Supply Group, War Department General Staff.

LIQUID OXYGEN CONVERTER FOR BREATHING PURPOSES

Army Air Forces disclosed on February 10 the development of a liquid oxygen converter for breathing purposes which has distinct advantages over other converters developed (and some found unpractical) over a period of many years of experimentation. The new converter is simple to operate and greatly reduces the weight and space requirements of oxygen equipment now in use. The National Bureau of Standards and the Bendix Aviation Corporation assisted the Army Air Forces in developing the new converter. It has been subjected to various laboratory tests and has been flight tested up to an altitude of 40,000 feet, using a crew of eight men, and in all experiments the equipment performed satisfactorily. The liquid system contains 750 cubic feet of oxygen (after conversion to the gaseous stage) in one unit, which occupies only 5 cubic feet of space and weighs 130 pounds, whereas the low pressure system now in use occupies 30 cubic feet of the plane's interior with eighteen large tanks holding 522 cubic feet of oxygen and weighing a total of 412 pounds. The liquid unit therefore would save 67 per cent of the weight and increase the available oxygen by 45 per cent, while the cubage consumed is about one-sixth that of the present system. The converter requires no source of heat other than ambient temperature. The Massachusetts Institute of Technology is conducting further experiments to find better methods for storage and handling of the liquid oxygen, which must be under sufficient pressure in storage to prevent evaporation.

ARMY AWARDS AND COMMENDATIONS

Lieutenant Colonel Joseph G. Kostrubala

The Army Commendation Ribbon has been awarded to Lieut. Col. Joseph G. Kostrubala, M. C., A. U. S., of Chicago, who was addressed in these words in a citation signed by the Surgeon General: During World War II the Medical Department carried out its mission with outstanding success. This achievement was made possible only through the combined efforts of all Medical Department personnel. Your service with the Medical Department has been exceptional when compared with others of the same grade of similar position, and I wish to commend you for your outstanding contribution as assistant chief, plastic surgery section, William Beaumont General Hospital, El Paso, Texas, from July 1, 1945 to April 15, 1946. Dr. Kostrubala graduated from Northwestern University Medical School in 1937 and entered the military service Aug. 16, 1942.

Lieutenant Colonel Arie C. van Ravenswaay

The Legion of Merit has been awarded to Lieut. Col. Arie C. van Ravenswaay, M. C., A. U. S., of Boonville, Mo., who was chief of the Special Projects Branch, Office of the Air Surgeon, Headquarters, Army Air Forces, from December 1943 to September 1945. The citation states that he administered many projects related to the preservation of the health of Army Air Forces personnel. Colonel van Ravenswaay's many advances in medical science have been of inestimable value and reflect great credit on himself and on the armed forces of the United States. Dr. van Ravenswaay graduated from Washington University School of Medicine in 1932 and entered the military service on Aug. 21, 1942.

Major William Leifer

The Legion of Merit has been awarded to Major William Leifer, M. C., A. U. S., of New York. The citation states that he distinguished himself as chief of Penicillin Research Project at Regional Hospital, Fort Bragg, North Carolina, from July 1943 to September 1945. His contribution in the furtherance of studies pertaining to penicillin as a measure for combating the effects of certain diseases among personnel of the armed forces contributed materially to the success of the National Research Council. Major Leifer's attainments reflect credit on himself and on the Army Medical Department. Dr. Leifer graduated from New York University College of Medicine in 1925 and entered military service May 30, 1942.

Major James V. Luck

The Legion of Merit was recently awarded to (formerly) Major James V. Luck, M. C., A. U. S., of Los Angeles, who served as an orthopedic surgeon, Santa Ana Army Air Base from January 1943 to September 1944, and as chief, orthopedic surgery section, Army Air Forces Regional Hospital, Chanute Field, from September 1944 to January 1946. The citation states that he made outstanding contributions to military and civilian orthopedic surgery. Major Luck's unusual professional ability and his brilliant attainments reflect the highest credit on himself and the armed forces of the United States. Dr. Luck graduated from St. Louis University School of Medicine in 1931 and entered the service in November 1942.

MISCELLANEOUS

SALE OF PORTABLE X-RAY UNITS

The War Assets Administration has 200 portable x-ray units for sale at St. Louis. Physicians who are veterans have certain priority rights in purchasing this equipment. They should communicate with the War Assets Administration, Regional Office, 505 North 7th Street, St. Louis 1.

NAVY

NEED RESERVE MEDICAL OFFICERS

Headquarters of naval air reserve training is at the Naval Air Station, Glenview, Ill., and within that command are sixteen major naval air stations and six training units. Each of the naval air stations requires two full time medical officers, one of whom must be a flight surgeon. Each of the training units requires one full time medical officer who must be a flight surgeon. In addition, medical officers are needed for part time duty with combat units of the air reserve. The organized reserve units usually report twice a month on weekends and receive pay which, over a period of a year, amounts to about two months of full time active duty pay. Reserve medical officers and pharmacists interested in active duty of this kind should write to the Bureau of Naval Personnel via the chief of Naval Air Reserve Training, Naval Air Station, Glenview, Ill. Personnel are desired in ranks not above that of commander in the medical corps. Every effort will be made to continue officers qualified for this service in the assignments consistent with the needs of the service. Government quarters are available at many of the major naval air stations.

NAVY AWARDS AND COMMENDATIONS

Captain James R. Fulton

The Legion of Merit has been awarded to Capt. James R. Fulton (MC), U.S.N., of Bremerton, Wash., for exceptionally meritorious conduct in the performance of outstanding service as senior medical officer of the U. S. S. *Bountiful* from January to December 1944 during the invasion of Saipan, Guam, Peleliu and the Philippine Islands. The citation calls attention to the facts that he organized and indoctrinated his staff to render every possible emergency and surgical aid to the sick and wounded. His professional skill as a surgeon and consultant contributed to the saving of many lives. His leadership and devotion to duty were directly responsible for the extremely low mortality rate among the injured received for treatment. His performance of duty was outstanding and his conduct was at all times in keeping with the highest traditions of the United States Naval Service. Dr. Fulton is a graduate from Harvard Medical School in 1925 and entered military service June 22, 1925.

PUBLIC HEALTH SERVICE

REGULATIONS FOR HOSPITAL SURVEY AND CONSTRUCTION ACT

The Hospital Survey and Construction Act, enacted Aug. 13, 1946, permits appropriations up to $3,000,000 to assist states in surveying and planning their hospital needs, and $75,000,000 annually for the next five years to assist in the construction of hospitals and health centers. For administration and surveys $2,350,000 has been appropriated. No construction money has yet been appropriated, but funds for this purpose will be requested at the present session of Congress. Administration of the hospital program is left primarily to the states, but the law specifies that regulations shall be prescribed by the Surgeon General of the United States Public Health Service and approved by the Federal Security Administrator and the Federal Hospital Council. The newly issued regulations cover type, size and distribution of hospitals, priority to be given to projects, general standards of construction and equipment, and state administration methods. Provision also is made to assure services to persons unable to pay. The number of general hospital beds to be distributed according to the act among base, intermediate and urban areas ranges from 4.5 to 5.5 beds per thousand of population, depending on state population density. Regulations further qualify distribution from 2.5 beds per thousand of population in rural areas to 5.5 beds per thousand in base areas. Should the combined number of beds allowed in various areas of a state be less than the total allowed for the entire state, remaining beds are to be distributed at the discretion of the state, with special consideration for hospitals serving rural areas and communities with small financial resources.

Regulations follow the law on distribution of beds in tuberculosis, mental and chronic disease hospitals. Maximum beds for tuberculosis patients will be 2.5 times the average annual deaths from tuberculosis in the state over the five year period from 1940 through 1944, for mental patients, 5 per thousand of population and for chronic disease patients 2 per thousand of population. The regulations stipulate that building of these hospitals shall be in centers of population and in proximity to general hospitals whenever practical.

The number of public health centers is not to exceed one for each 30,000 of population except in states with fewer than 12 persons per square mile, where the number of centers is not to be more than one for each 20,000 of population. Each state has the authority to distribute these centers to conform to its individual organization of local health units.

Since the goal of the program is to provide hospitals where they are most needed, construction funds will be granted according to priorities indicated by each state in its overall construction plan. Both the law and the regulations, however, establish principles to be followed in determining the priority to be given hospital projects. The law provides for the granting of priorities to general hospitals in rural areas and in localities where population groups are less adequately served because of race, creed or color. Public health centers in rural areas also will receive preference. Regulations further specify that each state, as far as practical, shall develop its program in accordance with the proportionate need for each of the five types of hospitals authorized in the act: general, mental, tuberculosis, chronic and health centers. For all types of hospitals, priority is to be given to new construction and additions to existing facilities rather than to replacements.

Standards of construction and equipment which the regulations establish include minimum requirements necessary to insure properly planned and well constructed hospital buildings. The standards relate to choice of site, type of architecture, construction, sanitation and general building regulations.

Regulations call for assurance from applicants for construction funds that hospitals built with federal aid under this act shall be open to every one. The regulations provide that hospitals under the plan must be available without discrimination on account of race, creed or color. In areas where separate hospital facilities are provided for separate population groups an exception may be made, but only if the plan makes equitable provision for facilities and services of like quality for all such groups. "Equitable provision" is defined as equal to the proportion of the separate population groups in the total population of the area. They also specify that a state shall not include in its construction program facilities for a separate population group beyond what are needed for adequate hospital care.

The regulations also call for assurance from applicants that a reasonable amount of free patient care will be given. In determining what constitutes a "reasonable amount" the state considers conditions in the area to be served, including free care already available. This provision may be waived by the Surgeon General when it is not financially feasible.

Regulations include general methods of administration of state construction plans by state agencies designated to carry out hospital programs. This section covers development of the state program, processing of applications and the conditions required for their approval, the manner of making construction payments and other fiscal matters.

A base area is described as one containing either a university teaching hospital or a population of 100,000 with a large general hospital. The law is the basis for the definition of a hospital, which includes not only hospitals and health centers but related facilities such as laboratories, outpatient departments, nurses' homes and training schools and central service facilities operated in connection with hospitals. Federal hospitals and institutions furnishing primarily domiciliary care are excluded from financial aid through this act. A limited number of reprints of the regulations will be available from the Public Health Service.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS EDUCATION AND PUBLIC HEALTH)

ALABAMA

Personal—The new director of the state health department's Division of tuberculosis control is Dr James M Freeze, U S Public Health Service, who succeeds Dr N H DeJanney, Alabama City, resigned Dr Freeze comes from Bethesda, Md, where he has been doing graduate work in the U S Public Health Service office

Dr. Foley Named Professor of Anatomy.—Dr James D Foley has been appointed chairman and professor of anatomy at the Medical College of Alabama Birmingham Dr Foley, ormerly of Tulane University of Louisiana School of Medicine, New Orleans, joined the faculty of the medical college in 1945 when the Alabama School of Basic Medical Science was made part of the four year medical college of Alabama Dr Foley received his B S degree from Oregon State College and his Ph D from the University of Wisconsin His research has dealt chiefly with the anatomy of the nervous system

CALIFORNIA

Society News.—The Trudeau Society of Los Angeles, which constitutes the Tuberculosis Section of the Los Angeles County Medical Association, has elected as officers for 1947 Drs Edward Kupka, Los Angeles, president, Joseph L Robinson, Olive View, vice president, and Arthur E T Rogers, Olive View, secretary treasurer

Annual Reginald Knight Smith Lecture.—Mount Zion Hospital, San Francisco, presented its annual Reginald Knight Smith Lecture February 13 The lecturer was Dr William Dameshek professor of clinical medicine, Tufts College Medical School, Boston and his subject "Disorders of the Spleen with Particular Reference to Hypersplenism"

FLORIDA

School Health Program—The state board of health plans to conduct a special school health examination and immunization program which will reach 40,000 children before July 1 A special grant of $70 000 from the federal Children's Bureau to conduct the program was obtained by Dr Wilson T Sowder, Jacksonville, state health officer Twenty-five young doctors under the supervision of Dr Grace Hardy, pediatrician, have consented to enter the field Defective sight, hearing, posture and mild nutrition deficiencies which show up in the skin will be particular objectives of the campaign Cases will be referred to private physicians and to the crippled children's commission Most of the work is to be carried on in counties where county health department personnel is inadequate

ILLINOIS

Campaign to Improve Mental Care—The Illinois Society for Mental Hygiene has named a committee to spearhead a statewide campaign to raise the state mental hospitals to the minimum standards for adequate treatment and care of patients, Dr Rudolph G Novick, medical director of the society, has announced Illinois hospitals, he says, fall short of the minimum standards of the American Psychiatric Association by more than 150 doctors, 1,220 nurses and 1,358 attendants besides deficiencies in social workers and therapists On the committee are Ronald P Boardman, president of the society, Drs John J. Madden, Maxwell Gitelson and George J Mohr, Mrs Thomas A Connors, Mrs Sarah B Schaar and Frank H Woods Jr

Program in Speech and Hearing Rehabilitation—A research and clinical program in speech and hearing rehabilitation has been opened by the University of Illinois College of Medicine Chicago, under the direction of Herbert Koepp-Baker, Ph D, formerly director of the speech and hearing clinic at Pennsylvania State College The work will be supervised by Dr Francis L Lederer, head of the otolaryngology department and chief of that service in the Eye and Ear Infirmary Dr Koepp Baker will also direct the new speech and rehabilitation division of the Illinois Eye and Ear Infirmary. The department will immediately provide instruction and clinical experience in this field for medical students, physicians and persons in closely correlated nonmedical branches of speech education Instruction will be on a graduate and postgraduate level.

Evanston Fluorine Research Project.—After some three years of planning, a program was activated February 17 whereby 1 part of fluorine will be added to each million parts of the water supply of Evanston in a research project which it is hoped will limit or check tooth decay in Evanston and Skokie The examination of 4,400 school children in these communities in two groups, 7 to 9 years of age, and 12 through 14, was completed February 7 The younger group will be reexamined within a year and the older group after two years The program, based on a survey made several years ago by the U S Public Health Service, is sponsored by the Evanston Board of Health, the State Dental Department and the Zoller Dental Clinic of the University of Chicago The survey is said to have revealed that children in Evanston and some other suburbs using Lake Michigan water, which is fluorine free, suffered almost three times more tooth decay than children in certain inland cities where the water contains a minute trace of fluorine The commissioner of health of Evanston, Dr Winston H Tucker who is working with Dr J Roy Blayney, director of the Zoller Clinic, on this research program said that it remains to be seen whether artificially added fluorine is as effective as that found as a natural element in drinking water The fluorine solution to be added is tasteless, colorless and odorless

Chicago

Rabies Warning.—Cases of rabies are on the increase in Chicago according to Dr Edward A Piszczek, county health director Within the first three weeks of January 20 cases of rabies in dogs were reported in Cook County, 10 of them in Chicago, a large number for the winter season, Dr Piszczek said

Alcohol and the Psychiatric Problem—Dr Vladimir G Urse, superintendent of Cook County Psychopathic Hospital, told the Illinois County and Probate Judges association at their recent convention in Chicago that today 1 out of every 4 patients at Psychopathic Hospital is an alcoholic problem as compared to 16 per cent thirty years ago and 21 per cent five years ago The judges are concerned over the flooding of mental institutions with alcoholic addicts

The McArthur and Hektoen Lectures—The twenty-third Lewis Linn McArthur Lecture of the Frank Billings Foundation will be delivered at the Palmer House Friday, February 28 at 8 p m Dr Robert H F Elliott Jr, department of surgery, Columbia University College of Physicians and Surgeons New York, will speak on "A Revaluation of Splenectomy in Thrombocytopenic Purpura Based on a Twenty-Seven Year Combined Clinic Follow-Up" Dr Herbert M Evans director Institute of Experimental Biology, University of California Berkeley, will deliver the twenty third Ludvig Hektoen Lecture of the foundation at the Palmer House March 28 at 8 p m His subject will be "The Internal Secretions of the Pituitary Body"

KANSAS

Public Health Training Center—The Topeka City-Shawnee County Training Center for public health workers, 300 West Eighth Street, has opened with public health employees as the first class of trainees Teaching personnel have been assigned to the center by the U S Public Health Service to take responsibility for the first course Sanitarians from health departments in North and South Dakota, Nebraska, Minnesota, Iowa and Missouri as well as Kansas are attending Director of the training center, said to be the second of its kind in the country, is Dr David D Carr It is sponsored by the Kansas State Board of Health, with the U S Public Health service cooperating

LOUISIANA

Rudolph Matas Gives 50 Year Files to Library.—The Matas Library of the Tulane University of Louisiana School of Medicine, New Orleans, has received files of the Italian medical journal *Policlinico* covering the fifty year period preceding World War II They are the gift of Dr Rudolph Matas, professor emeritus of general and clinical surgery, on the occasion of his eighty-sixth birthday

Tulane Offers Degree in Public Health—The departments of Tropical Medicine and Preventive Medicine of the Tulane University of Louisiana School of Medicine, New Orleans, have combined to form a new department of Tropical Medicine and Public Health The enlarged department will consist of three units clinical tropical medicine, parasitology and public health Plans are under way to offer a course which will lead to a combined degree in tropical medicine and public health. The only school which now offers such a combined degree is the London School of Hygiene and Tropical Medicine, London, England. There are now only eight schools in this country offering training in public health. Plans are also being made for the new department to take over the University Student Health Service, with greatly enlarged facilities. This will involve the establishment of a university infirmary for all nonresident students. The new health service will act as a training center for public health instruction. The new department will be headed by Dr. William A. Sodeman, who has been head of the Department of Preventive Medicine since 1941. Dr. Sodeman is now carrying on special clinical studies at the School of Tropical Medicine in Puerto Rico and will later visit Venezuela and Panama, where he will study prevalent tropical diseases and methods for their control. The merger of the two departments will become effective when he returns.

MICHIGAN

Personal.—Dr. Max Burnell, chairman, Genesee County Medical Society Cancer Committee, was recently presented a meritorious service award of the American Cancer Society for his leadership in cancer control during the last five years.——Dr. Darrell A. Campbell, formerly of Charleston, W. Va., has accepted the position of chief of the surgical staff of the Wayne County General Hospital and Infirmary, Eloise.

Annual Cancer Day.—The second annual Cancer Day, sponsored by the Genesee County Medical Society, will be March 19. In a scientific program in the auditorium at Hurley Hospital, Flint, the following speakers will participate: Drs. Albert C. Furstenberg, dean, University of Michigan Medical School, Ann Arbor; George Papanicolaou, associate professor of anatomy, Cornell University Medical College, New York City; G. Gavin Miller, professor of surgery, McGill University Faculty of Medicine, Montreal, Canada; David Steel, radiologist, St. Joseph's Hospital, Cleveland; Cornelius P. Rhoads, medical director, Memorial Hospital for the Treatment of Cancer and Allied Diseases, New York City. The evening program in the ballroom of the Durant Hotel is open to the public. Charles F. Kettering, Ph.D., Detroit, will be the speaker.

MINNESOTA

License Revoked.—On July 12, 1946 the Minnesota State Board of Medical Examiners revoked the license to practice medicine previously issued to Dr. Jerome Ettinger, Minneapolis, who had been convicted on theft charges.

Reorganize State Health Department.—The Minnesota Department of Health, hitherto operating under nine divisions, has been reorganized under five sections: departmental administration, preventable diseases, medical laboratories, environmental sanitation and special services. The chiefs of the five sections will also serve as an advisory council to Dr. Albert J. Chesley, Minneapolis, the executive health officer of the health department.

NEW JERSEY

Physician Sentenced.—According to the New York *Times*, Dr. Leopold Brandenburg, Union City, has been sentenced to four to five years in state prison and fined $1,500 in connection with his conviction on Nov. 28, 1946 on charges of abortion (The Journal, Feb. 9, 1946, p. 362).

Amputee Clinic.—A month long amputee clinic opened February 3 at Hasbrouck Heights Hospital under the direction of Dr. Henry H. Kessler, Newark, former director of the navy amputation hospital at Mare Island, Calif. More than 200 orthopedic surgeons, mostly from New York, New Jersey and neighboring states, as well as artificial limb manufacturers and persons who have undergone amputations will take part. Dr. Kessler hopes to bring the benefits of army and navy wartime research on amputation to the civilians in this country who have lost arms and legs. While there were 17,000 service men who suffered amputations during the war, the number of civilians who lost limbs during the same period is 120,000, Dr. Kessler said. His program includes five points: Patients should be shown by demonstration what their abilities will be with an artificial limb; there should be close cooperation between artificial limb design and the surgical types of amputations performed; medical supervision of the stump should be continued until the artificial limb is properly fitted; design of the artificial limb should be suited to the occupation the patient expects to perform as well as to his general build; the patient should be educated at the hospital in the use of the artificial limb and its capabilities.

NEW YORK

Personal.—Dr. Harry A. Steckel, director of Syracuse Psychopathic Hospital, retired February 1 after thirty-four years of service. He will also leave his position of professor of psychiatry, Syracuse University College of Medicine, to take up the position of neuropsychiatrist to the regional office of the Veterans Administration in Syracuse on a part time basis.

Cancer Clinic.—A cancer prevention and detection clinic for doctors and nurses has been opened at Queens General Hospital, Jamaica. It is held on the second Monday of each month from 6 to 9 p. m., examinations by appointment only. The clinic is sponsored by the Queens County Cancer Committee and is under the directorship of Dr. Leonard B. Goldman, Elmhurst.

Public Health Nurses' Examination.—A statewide open competitive examination for public health nurses will be held some time in April to fill the present 148 positions available in thirty-three counties. Entrance salaries range up to $2,400. Candidates must be graduates of an approved school of nursing, have completed an approved one year program of instruction in public health nursing or must have the equivalent of both. Persons interested are urged to write the State Department of Civil Service not later than March 21 requesting application forms and a detailed announcement.

Plans to Stimulate Student Nurse Enrolment.—The New York State Nurses Association, district 1, has launched plans to stimulate enrolment of student nurses in all hospital schools for professional nurses in New York. Tentative recruitment plans include a proposal to issue a pamphlet or brochure to all women students in the senior classes of high schools in western New York, listing professional schools of nursing and describing admission requirements and curriculums offered. Greater emphasis will be placed henceforth on the desirability of a professional nursing education for well qualified students. In addition, a speakers' bureau will be established.

Examinations for Mental Hygiene Positions.—The state of New York aims to expand its treatment, training and research services in mental hygiene, child guidance and delinquency prevention programs and has opened opportunities for professional workers in these fields who are residents of New York. Examinations will be held March 22. A senior and an assistant research psychiatrist are needed for special projects of laboratory and clinical character in the department of mental hygiene, whose centers are located in Syracuse, New York City and Orangeburg. Research psychiatrists of the senior group also carry on some teaching activities at either Syracuse University College of Medicine or the College of Physicians and Surgeons at Columbia. The range of salary in the senior grade is from $4,560 to $5,700. For the assistant grade it is from $3,681 to $4,560. Senior psychologists at $3,681 to $4,560 a year are being sought for state and county departments and institutions. Junior psychologists at $2,268 to $2,806 are needed for institutions and for the departments of mental hygiene, division of prevention, Albany. Further information may be obtained by writing to the State Department of Civil Service, Albany, N. Y., stating positions in which one is interested: senior research psychiatrist, No. 4359; assistant research psychiatrist, No. 4332; senior psychologist, No. 4358; junior psychologist, No. 4352.

New York City

Narcotic Violation.—Dr. I. Hugo Francese, 635 East 211th Street, Bronx, N. Y., was convicted in the United States District Court at New York City of violation of section 2554(a) of the Internal Revenue Code and was sentenced on January 13 to serve a term of eighteen months.

Personal.—Dr. Sigmund L. Friedman, assistant administrator of Beth Israel Hospital, Boston, has been appointed executive director of Sydenham Hospital, effective February 3. Dr. Friedman is a graduate of the college and medical school of New York University and served as resident in hospital administration at Montefiore Hospital for Chronic Diseases before going to Boston three years ago.——Dr. Franklin M. Foote, New York, has been named medical director of the National Society for the Prevention of Blindness. Dr. Foote formerly was chief of the division of local health administration, Connecticut State Department of Health, and is now assistant professor of public health in preventive medicine, Cornell University Medical College.——Dr. Louis F. Bishop Jr. was named one of the honorary police surgeons of New York City in December by Mayor O'Dwyer.

Soot Fall Averages 112 Tons per Square Mile.—Mayor William O'Dwyer early this month called on forty municipal agencies, civic organizations, medical societies and industrial groups in the metropolitan area to set up a "citizens' committee";

to help clear the atmosphere of the New York area. Soot fall figures for 1946 average 112 tons each square mile, compared to a prewar average of 55 tons. Figures for 1936, the first year and only prewar year such an investigation was made, show an average of 105.6 tons in industrial areas. Dr. Israel Weinstein, health commissioner, has a seven man squad of full time smoke inspectors in the field and expects to increase the force to thirty-five. Their work will be largely educational. Chief causes of soot fall are wrong fuel and improper firing.

OHIO

Dr. Jorpes of Stockholm to Lecture at Columbus.—The annual Alpha Omega Alpha lecture at the Ohio State University School of Medicine at Columbus will be delivered by Dr. Erik Jorpes of Stockholm, Sweden, in April. This will be one of a series of lectures which Dr. Jorpes will present while visiting this country.

Public Welfare Appointments.—Dr. Mark W. Garry, former director of the tuberculosis division of the Ohio Department of Health, has been appointed to the position of chief of tuberculosis and internal medicine of the division of mental hygiene. Dr. Garry is a graduate of Marquette University School of Medicine and has been with the Department of Health since 1945. Dr. Elizabeth Bryan, formerly of Children's Hospital, St. Louis, has been named medical director of crippled children's service, under the division of social administration.

PENNSYLVANIA

Personal.—Dr. J. Norman White, Scranton, recently resigned as chief of staff of the Moses Taylor Hospital after many years of service.——Joseph B. Cady, chief of the section of cardiology and thoracic medicine at the Robert Packard Hospital in Sayre, is the newly appointed medical director at the State Rheumatic Heart Clinic at Sayre.

Philadelphia

Forum on Biologic Warfare.—The potentialities and implication of bacteriologic warfare are the subject of discussion at a public forum to be sponsored by the Association of Philadelphia Scientists on Thursday, February 27. The meeting is an outgrowth of the study of the problem in international control of the implements of warfare undertaken by the council in accordance with a resolution approved by the membership of the association last November. Physicians and biologists who have assisted the council include Dr. Edward L. Bortz, Lankenau Hospital, and Drs. Stuart Mudd and Harry D. Bruner and Thomas F. Anderson, Ph.D., of the University of Pennsylvania. Dr. Oram Woolpert, director of Camp Detrich, Frederick, Md., the biologic warfare research center of the army, was invited to attend.

UTAH

Cited for Clinical Investigative Work.—The department of obstetrics and gynecology of the University of Utah School of Medicine, Salt Lake City, was recently awarded the annual prize for 1946 by the Central Association of Obstetricians and Gynecologists for the best clinical investigative work. The research described in the paper was the work of Drs. Emil G. Holmstrom and Charles E. McLennan on "Menorrhagia Associated with Irregular Shedding of the Endometrium."

WEST VIRGINIA

Child Health Director.—Dr. Isabel Morgan, Ann Arbor, Mich., who has been on the staff of the School of Public Health at the University of Michigan for the past two years, has been appointed director of the division of maternal and child health, state health department, effective February 1. Dr. Norman G. Angstadt, Charleston, has been acting director of the division since the resignation of Dr. Lenore Chipman, Williamstown, Ky., in 1944. Dr. Angstadt has resigned to accept appointment as director of the department of medical supervision of the school district of Reading, Pa.

Governor Appoints Hospital Advisory Council.—A state advisory council has been appointed by Governor Clarence W. Meadows to consult with the state health department in carrying out the purposes of the Hill-Burton hospital construction act. The bill itself provides that an advisory council of laymen and physicians be designated before an application for funds can be approved. The physicians on the advisory council appointed by the governor are Paul H. Revercomb, Charleston; Oscar B. Biern and Robert J. Wilkinson, Huntington; Marvin H. Porterfield, Martinsburg; Richard O. Rogers, Bluefield; William R. Laird, Montgomery, and Andrew E. Amick, Lewisburg.

GENERAL

College Health Conference.—The third National Conference on Health in Colleges, the first meeting of its kind in more than ten years, will be held in New York City May 7-10, sponsored by thirty-five leading organizations in health and education. It is called to meet new health problems arising during the postwar period.

Dr. Herwick Resigns.—Dr. Robert P. Herwick, medical director of the U. S. Food and Drug Administration since 1938, has resigned and accepted an appointment as medical director of the Whitehall Pharmacal Company, a division of American Home Products Corporation. He will supervise product control and research. He has also resigned as a member of the Council on Pharmacy and Chemistry of the American Medical Association.

Yellow Fever and Plague.—*Public Health Reports* lists the following number of cases of yellow fever reported through consular agents, international health organizations, medical officers in public health services and other sources for November 1946: French Equatorial Africa 3 (including 2 suspected cases) and the Ivory Coast in Africa 1 case. The cases of plague reported for the same period include, among others, India 2,309, Burma 206, Madagascar 25, Siam 11 and Buenos Aires, Argentina, 8. These numbers should not be considered as complete or final as regards either the list of countries or the number of cases.

Southwest Allergy Forum.—The Southwest Allergy Forum will meet March 31 and April 1 in the Washington-Youree Hotel, Shreveport, La. Dr. George L. Waldbott, Detroit, will open the session at 9 o'clock Monday, speaking on "Some Faults in Allergists' Routine." Other speakers include Drs. Bernhard Steinberg, Toledo, Ohio; Boen Swinny, San Antonio, Texas; Robert E. Stone, Birmingham, Ala.; James H. Black, Dallas, Texas; Mr. Oren C. Durham, Chicago; Dr. Tinsley R. Harrison, Dallas, Texas; Dr. Francis M. Rackemann, Boston, and Dr. Jerome Glaser, Rochester, N. Y. Round table discussions will be held on dermatologic allergy, treatment of hay fever and nutritional problems in allergy.

Awards to Medical Students.—Bent G. Boving, a junior student at Jefferson Medical College, Philadelphia, has been awarded the first prize, $500, in the 1946 competition sponsored by the Schering Corporation, Bloomfield, N. J., for his essay on "The Role of Hormones in Sterility." The second prize, $300, was awarded to William O. Maddock, a student of the University of Oregon Medical School, and the third prize to Stonewall B. Stickney, Tulane University of Louisiana School of Medicine, New Orleans, and Lionel M. Mapp, McGill University Faculty of Medicine, Toronto, each of whom received $200. These awards are offered annually to undergraduate students in the United States and Canada for the purpose of stimulating interest in endocrinology.

Pan American Congress on Tuberculosis.—The seventh Pan American Congress on Tuberculosis will be held in Lima, Peru, March 17-22. The following fellows of the American College of Chest Physicians will be delegates: Drs. Chevalier L. Jackson, Philadelphia, chairman, Council on Pan American Affairs; Jay A. Myers, Minneapolis, editor, *Diseases of the Chest;* Richard H. Overholt, Brookline, Mass., first vice president; J. Winthrop Peabody, Washington, D. C., chairman, Council on Postgraduate Medical Education, and Mr. Murray Kornfeld, Chicago, executive secretary. The college maintains active chapters in a number of the South American countries and it is expected that a large delegation of physicians from those countries will attend its annual meeting at the Ambassador Hotel, Atlantic City, June 5-8.

National Heart Week.—Beginning with National Heart Week February 9-15 and continuing through the year, the American Heart Association will carry out a program of research, service and education in an effort to concentrate on educating the public with regard to problems of heart disease. The association's program calls for emphasis on educational work with schools, parent-teacher associations and other groups concerned with children because of the importance of rheumatic fever and heart disease among children. The war forcibly dramatized the need for a national program designed to retard the increase in cases of heart disease. Dr. Thomas Parran, surgeon general, U. S. Public Health Service, has pointed to the rise of heart disease from fifth place as a cause of disease in 1900 to first place today. The modern physician, he says, knows that heart disease will kill about twice as many people this year as will cancer and about seven times as many as tuberculosis. One out of every 20 persons suffers from diseases of the heart and blood vessels.

International Congress on Legal Medicine.—The second International Congress of the International Academy of Legal and Social Medicine will be held in Belgium (Brussels and Liége) June 25-28. The activities will be divided into five sections: legal medicine in its applications to crime, social medicine, industrial medicine, medicolegal and social psychiatry and scientific police. The official languages will be English and French. The academy will take advantage of this opportunity to promote a renewal of international cooperation in these fields of science. This cooperation will be established on a new basis, which will take largely into account the circumstances borne of the late war. Persons who wish to present reports or read papers should notify without delay either the president of the congress, Prof. Dr. Maurice De Laet, Faculté de Médicine, 7 Rue de la Gendarmerie, Brussels, or one of the general secretaries, Prof. Dr. P. Moureau, 47 Rue Villette, Liége, and Prof. Dr. Frederic Thomas, 23 Kluyskensstraat, Ghent.

Dr. Esmond Long Appointed Director of Research.—The National Tuberculosis Association has appointed Dr. Esmond R. Long director of its newly created Division of Research. While the association has had a committee on medical research for years, its research activities are being expanded by bringing into the division the work on medical research, activities in the field of social research, certain parts of the statistical program and its expanding work on historical research. Each of these departments will be covered by a voluntary committee of the members of the association or a special group within the central office. The committee on medical research is being continued within the division under the chairmanship of Dr. H. Stuart Willis of the Maybury Sanatorium, Northville, Mich., and is cooperating intimately in such present day research as chemotherapy of tuberculosis, BCG vaccination and antibiotics. While much of the administrative work and the financial details of the new division will be handled in New York City, Dr. Long will continue his duties as director of Henry Phipps Institute for the study, treatment and prevention of tuberculosis of the University of Pennsylvania, which has taken part in the research work of the National Tuberculosis Association for many years. During the war Dr. Long was chief consultant on tuberculosis in the Surgeon General's Office and for a time also served as acting director of the tuberculosis service of the Veterans Administration. He continues to serve the Veterans Administration and the army and also the U. S. Public Health Service as consultant on tuberculosis.

The Toll of Accidents.—The National Safety Council reports that 100,000 persons died in accidents in 1946 and 10,400,000 were injured. The estimated total economic loss from accidents was $5,600,000. This toll is 4 per cent above that of 1945; however, deaths of children from accidents in the 5 to 14 age group decreased 8 per cent. Deaths from accidents in 1946 as compared to 1945 were as follows:

	1946	1945	Change
All accidents	100,000	95,918	+ 4%
Motor vehicle	33,500	28,076	+19%
Home (civilian)	34,000	33,500	+ 1%
Occupational (civilian)	16,500	16,500	0%
Public (civilian not motor vehicle)	17,000	16,000	+ 6%

The 1946 all accident death rate was 71.4 per hundred thousand of population, the cause of death being: falls 27,800, burns 10,200, a 3 per cent increase over 1945, drownings 7,300, an increase of 2 per cent, firearms 3,100, an increase of 24 per cent, and catastrophes in which the toll was at least 5 lives 1,300. The greatest number of deaths, 34,000, occurred in the home. Disabling injuries in home accidents numbered 5,100,000, with a wage loss, medical expense and overhead costs of insurance totaling about $600,000,000. The traffic death toll of 33,500 was 19 per cent greater than in 1945 but below the all time high of 39,969 in 1941. In addition, 1946 traffic caused about 1,150,000 nonfatal injuries. All costs, including medical expenses, overhead costs of insurance and motor vehicle property damage was $1,650,000,000. Deaths from occupational accidents in 1946 totaled 16,500, about the same as in 1945. Disabling injuries from work accidents numbered about 2,050,000, with an economic loss totaling $2,350,000,000. The 1946 death total for public (not motor vehicle) accidents was approximately 17,000, an increase of 6 per cent from 1945. Nonfatal disabling injuries numbered about 2,100,000. Wage loss, medical expense and overhead costs of insurance totaled about $400,000,000. Fatal airplane accidents in domestic operation of scheduled air transports during 1946 numbered 12, with a death toll of 107, including 75 passengers and 32 crew members. This is a decrease of 43 per cent from the 1945 rate per hundred million passenger miles. Railroad accidents for the first eleven months of 1946 took a toll of 3,928 persons, a 7 per cent decrease from 1945. Resulting injuries dropped 15 per cent to a total of 49,049.

LATIN AMERICA

Allergy Clinics in South America.—Dr. Fred W. Wittich, Minneapolis, chairman Executive Committee International Association of Allergists, has just returned from holding conferences with allergy societies and allergy departments of the medical schools of South American countries and Cuba. The following countries have well organized allergy units in all the medical school polyclinics: Colombia at Bogota; Peru at Lima; Chile at Santiago; Argentina at Buenos Aires, Cordoba, La Plata and Rosario; Uruguay at Montevideo, and Brazil at Rio de Janeiro and São Paulo. In Havana there are allergy clinics at the Hospital de Maternidad Obrera and at the Asociacion Canaria Hospital of Havana. The Argentine government has established a National Institute of Allergic Diseases, and allergy diagnostic clinics are being established in rural and large centers. All the allergy societies of the countries mentioned are members of the International Association of Allergists. Spanish literature on allergy is accumulating fast. A close integration of the various departments exists in teaching allergy. A number of the allergists have spent one to two years of study in the United States at leading allergy clinics. In general, an excellent spirit of cooperation was noted among the Latin American allergists.

FOREIGN

Influenza in Sweden.—The New York *Times* reports that one fourth of the population of Sweden has been stricken with influenza. To help combat the epidemic 2,000 vials of influenza virus vaccine were shipped from La Guardia field, New York, February 6.

Foundation Terminates Grants to China College.—The Rockefeller Foundation has made its terminal contribution of $10,000,000 to the China Medical Board, Inc., for the support of Peiping Union Medical College, making a total of $44,652,490 it has appropriated to the college since 1915. The institution has graduated 350 doctors and 178 nurses, and more than 3,000 men and women have taken postgraduate studies. During the war thirteen of the seventeen nursing schools in free China were headed by graduates of the college's school of nursing. During the war years the college was in the hands of the Japanese and about 50 per cent of its medical equipment was removed. Dr. Harold H. Loucks, representative of the China Medical Board said "The commission was prompted by the looting of the medical school's equipment and the government postwar medical problem in China." Since early in 1946 the buildings have been used as executive headquarters of the peace commission endeavoring to arrange peace between the Chinese National Government and the Communists in that area. No date has been set for the resumption of the regular work at the college and hospital.

Marriages

Arthur Lawrence Bellott Jr., Memphis, Tenn., to Miss Grace Nadene Curde of Watauga in Elizabethton September 21.

Gregory Edward Flynn, Sea Girt, N. J., to Miss Margaret Lorraine Nugent of Lawrence, Mass., in Seattle October 19.

Henry Toole Clark Jr., Rochester, N. Y., to Miss Blanche Evelyn Burrus of Canton, N. C., October 1.

Charles Eugene Yeargin, Greenville, S. C., to Miss Jean Shaw of Boston in Laurens September 6.

Edward Riley Cannon, Andover, N. Y., to Miss Katherine Johanna Garvin of Oneida September 16.

Ralph Stuart Clayton, Ripley, Miss., to Miss Mary Bess McFatridge of Coldwater August 27.

John J. Hartford, Salina, Kan., to Miss Katharine Ann Kufahl of Emporia October 19.

Linus Worth Hewit to Miss Thelma Jane Hughey, both of Tampa, Fla., September 28.

Wyeth Hamlin, Palmyra, Mo., to Miss Mary Ann Gardner of Clinton, Ill., September 19.

Richard Hugh Wood, Atlanta, Ga., to Miss Nell Lawson Melton in Macon August 24.

Harry Fishbein, New Orleans, to Miss Lela Marion Hewes of Biloxi, Miss., October 3.

Swift C. Black, Springfield, S. C., to Dr. Susanne Geist of St. Paul August 19.

Morton H. Edelman to Miss Hilda Wyner, both of New York September 12.

Deaths

George Albert Ingrish ⊕ Chicago; University of Illinois College of Medicine, Chicago, 1931; professor of urology at the Cook County Graduate School; specialist certified by the American Board of Urology; member of the American Urological Association; served during World War II; attending urologist, Illinois Central Railroad; affiliated with the Cook County Hospital, Evangelical Deaconess Hospital, Englewood Hospital, Holy Cross Hospital, Roseland Hospital, Woodlawn Hospital and the Little Company of Mary Hospital, where he died Dec. 17, 1946, aged 40, of acute leukemia.

Arthur Franklin Barnett ⊕ Eugene, Ore.; Rush Medical College, Chicago, 1904; served as president of the Lane County Medical Society and the Central Willamette Medical Society; specialist certified by the American Board of Radiology; member of the American College of Radiology; on the staff of the Sacred Heart Hospital, where he died Nov. 29, 1946, aged 66, of gastrointestinal hemorrhage.

Edward Francis Besser, Newton, Iowa; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; member of the American Medical Association; died Nov. 21, 1946, aged 71, of coronary occlusion.

Andrew Baxter Byerly, Cooleemee, N. C.; University College of Medicine, Richmond, 1896; member of the American Medical Association; affiliated with the Rowan General Hospital in Salisbury; died Nov. 4, 1946, aged 77, of coronary occlusion.

Herbert A. Chipman, Stoughton, Wis.; the Hahnemann Medical College and Hospital, Chicago, 1890; for many years health officer; served as alderman; died in the Stoughton Hospital Dec. 13, 1946, aged 81, of uremia.

Frederick Charles Horsford, West Point Pleasant, N. J.; Columbia University College of Physicians and Surgeons, New York, 1900; also a graduate in pharmacy; served during World War I; affiliated with the Presbyterian, City and St. James hospitals, all in Newark; formerly on the staff of the State Hospital, Greystone Park; died Dec. 8, 1946, aged 75, of coronary occlusion.

Douglas Jennings, Bennettsville, S. C.; Medical College of the State of South Carolina, Charleston, 1919; member of the American Medical Association and the Southeastern Surgical Congress; past president of the South Carolina Medical Association and the Tri-State Medical Association of the Carolinas and Virginia; on the staff of the Marlboro County General Hospital; trustee of his alma mater and the city schools; died in the Roper Hospital, Charleston, Dec. 1, 1946, aged 52, of coronary thrombosis and hypertension.

Edward Stanton Jones, Girard, Pa.; Ohio Medical University, Columbus, 1902; served during World War I and on the staffs of various Veterans Administration hospitals; died in Hamot Hospital, Erie, Dec. 8, 1946, aged 74, of arteriosclerotic heart disease.

William Joseph McKillip ⊕ Milwaukee; Marquette University School of Medicine, Milwaukee, 1916; specialist certified by the American Board of Urology; for many years urologist for the city health department; served during World War I; on the staffs of the Misericordia and Evangelical Deaconess hospitals; consulting urologist, Veterans Administration Hospital in Wood; died Dec. 9, 1946, aged 59, of coronary occlusion.

Herbert Albert Maillet, Butte, Mont.; School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal, 1903; at one time official examiner for the Montana State Athletic Commission; on the staff of St. James Hospital; died in Rochester, Minn., Dec. 1, 1946, aged 69, of carcinoma of the bladder.

Edwin Alonzo Mason, Troy, N. Y.; Albany (N. Y.) Medical College, 1902; on the staffs of the Leonard and Samaritan hospitals; died Dec. 12, 1946, aged 70, of cerebral hemorrhage.

Helen B. Molnar-Sasko ⊕ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; died Nov. 21, 1946, aged 71, of arteriosclerotic heart disease.

Charles A. Moulton, Hartland, Maine; Medical School of Maine, Portland, 1884; member of the American Medical Association; past president and honorary member of the Maine Medical Association; trustee of the Scott-Webb Memorial Hospital; died Dec. 7, 1946, aged 86, of coronary occlusion.

Edward William Mueller ⊕ Chicago; Rush Medical College, Chicago, 1902; fellow of the American College of Surgeons; on the staff of the Ravenswood Hospital; died Dec. 8, 1946, aged 66, of coronary occlusion.

Francis Jeremiah Vincent O'Brien, Rochester, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1899; served during World War I; on the staff of St. Mary's Hospital; died Dec. 6, 1946, aged 74, of cerebral hemorrhage.

George Stewart Ogden, Brooklyn; Hahnemann Medical College and Hospital of Philadelphia, 1898; member of the American Medical Association; on the staff of the Prospect Heights Hospital; died Dec. 10, 1946, aged 72, of carcinoma of the bladder.

I. Davis Ozmun, Miami, Fla.; Syracuse University College of Medicine, 1888; died in the Sun-Ray Health Resort Dec. 9, 1946, aged 90, of shock due to fractured femur received in a fall.

Eugene Constantine Piette, Oak Park, Ill.; University of Kharkov Faculty of Medicine, Russia, 1917; specialist certified by the American Board of Pathology, Inc.; served as associate professor of pathology on the faculty of the University of Illinois College of Medicine in Chicago; formerly on the faculty of his alma mater; served in the Russian army during World War I; author of several books; affiliated with the West Suburban Hospital, where he died Dec. 4, 1946, aged 54, of cerebral hemorrhage.

James Alonzo Poling, Freeport, Ill.; Northwestern University Medical School, Chicago, 1893; member of the American Medical Association; formerly city health commissioner and district health officer; served on the staff of St. Francis Hospital; died in a hospital at Moline recently, aged 79, of arteriosclerotic heart disease.

Elmer S. Protzman, Kenton, Ohio; Medical College of Ohio, Cincinnati, 1895; member of the American Medical Association; served during World War I; died in the San Antonio Hospital Dec. 4, 1946, aged 74, of arteriosclerosis.

Samuel Arthur Purves ⊕ Des Plaines, Ill.; University of Illinois College of Medicine, Chicago, 1934; interned at the Augustana Hospital in Chicago; on the staff of St. Francis Hospital in Evanston; member of the board of health in Des Plaines; died Dec. 11, 1946, aged 37, of injuries received when his automobile collided with a bus.

Emil Arthur Rach ⊕ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1906; formerly on the faculty of the Loyola University School of Medicine; an obstetric consultant for the city health department; head of the obstetric department at St. Bernard's Hospital, where he was past president of the hospital staff; died in St. George Hospital Dec. 7, 1946, aged 67, of coronary thrombosis.

Claude E. Ragsdale, Trafalgar, Ind.; Medical College of Indiana, Indianapolis, 1894; died in Indianapolis Sept. 14, 1946, aged 77.

Warren Henry Ristine, Crawfordsville, Ind.; Bellevue Hospital Medical College, New York, 1877; member of the American Medical Association; for many years president of the school board; died in Lakeland, Fla., Dec. 5, 1946, aged 96, of senility.

William Wellington Ryerson ⊕ Port Huron, Mich.; Detroit College of Medicine, 1911; formerly associated with U. S. Public Health Service; on the staff of the Port Huron Hospital; died Dec. 6, 1946, aged 58.

Elmer Alexander Scherrer, Denver; Washington University School of Medicine, St. Louis, 1897; member of the American Medical Association; veteran of the Spanish-American War; for many years on the staff of the Mercy Hospital; died Oct. 26, 1946, aged 71, of coronary thrombosis.

Samuel Harold Sedwitz ⊕ Youngstown, Ohio; University and Bellevue Hospital Medical College, New York, 1914; fellow of the American College of Surgeons; on the associate staff of the Youngstown Hospital; died in the North Side Unit of the Youngstown Hospital Dec. 6, 1946, aged 54, of cirrhosis of the liver.

John J. Stitt, Risingsun, Ohio; Ohio Medical University, Columbus, 1896; member of the American Medical Association; died recently, aged 77, of arteriosclerosis.

George Homer Zimmerman, Caldwell, Ohio; Ohio State University College of Medicine, Columbus, 1917; secretary-treasurer and past president of the Noble County Medical Society; on the staffs of the Bethesda Hospital in Zanesville and the Memorial Hospital in Marietta; died Oct. 7, 1946, aged 57, of coronary thrombosis.

Foreign Letters

LONDON LETTER

(From Our Regular Correspondent)

Jan. 27, 1947.

A Blood Group Reference Laboratory

The great increase in the practice of blood transfusion in civilian practice which has developed out of its extensive use in the war has been reported in previous letters to The Journal. The blood transfusion service established for the treatment of civilians who were injured in the attack on this country from the air has been maintained in peace by the government. The Galton Laboratory Serum Unit of the Medical Research Council was established at Cambridge and was closed last May. The director, Dr. R. R. Race, then took charge of a new blood group research unit of the council at the Lister Institute, London. His assistant at Cambridge, Dr. A. E. Mourant, has been appointed director of the new blood group reference laboratory of the Ministry of Health, which will provide grouping serum and investigate clinical blood group problems. This laboratory is also housed at the Lister Institute, and its juxtaposition to the research unit will ensure a close association between theory and practice. Hospitals and doctors in need of grouping serum must in the first instance apply to their local regional transfusion service, through which it will be issued.

Cancer Research

In its twenty-third annual report, for 1946, the British Empire Cancer Campaign announced an active program for the present year. The scientific advisory committee will be enlarged by the inclusion of separate biochemical, biologic and physical subcommittees, each consisting of experts in their own branches but subject to coordination by the parent committee. Much attention will be given to the relation of viruses to cancer; the grand council has been asked to provide $100,000 for the purpose. The government research committee on the medical and biologic applications of nuclear physics will include what the campaign would otherwise have undertaken on the effects of radiations of various wavelengths on vascular endothelium and other components. A central consultant panel in morbid histology, available throughout the country, has been formed by the campaign to assist, in conjunction with the Pathological Society and the national radium commission, in the diagnosis of obscure pathologic material. Other innovations are a scholarships and fellowships committee and a Hospital Physicists Association. The former will enable the campaign to recruit new workers, and the latter will serve as a kind of library of physical data too extensive for full publication in journals.

Finally, the campaign announces a new journal the *British Journal of Cancer,* which will be its official organ. The first number will appear in the spring. The annual subscription will be $8.40, and the publishers will be Messrs H. K. Lewis & Co. Ltd., 136 Gower Street, London, W. C. 1.

Exhibition Showing the Conquest of Disablement

The Ministries of Labor, of National Service and of Health have opened an interesting exhibition in London entitled "And So to Work," which is another example of the great attention being paid to rehabilitation. The disabilities concerned may be due to war service, physical weakness or illness. The exhibition shows what can be done to rehabilitate the victim. There are 75 operators taking part in the exhibition, of whom 44 are ex-service men, including some wounded in the war of 1914-1918. The remainder are civilians disabled by accident or disease.

The disabilities of the operators include loss of both arms and loss of hearing, sight or speech. Of blind operators three civilian shorthand typists and two ex-service telephonists are employed by the Ministry of Labor. At the exhibition may be seen draftsmen, dressmakers, boot and shoe makers, typewriter mechanics, saddlers, diamond polishers, tailors, printers, watch and clock repairers, basket makers, spectacle frame makers and artificial leg makers, all following their crafts with uncanny efficiency. An automobile firm (Vauxhall Motors Ltd.) shows as a separate exhibit its own scheme for bringing back to work the disabled, whether from war wounds or from accidents in civil life.

Retirement of a Great Venereologist

Col. L. W. Harrison, adviser on venereal diseases to the Ministry of Health since 1919, has retired. He has been associated with the control of these diseases for nearly half a century and is the leading authority on the subject. In recognition of his work the American Social Hygiene Association awarded him the William Freeman Snow medal for 1946. This annual reward for distinguished service to humanity is a medical replica of the portrait plaque, which in 1937 was presented to Snow to mark his fortieth year of service in the field of public health and social hygiene. Appointed as pathologist to the Rochester Row Military Hospital, London, in 1909, Harrison did pioneer work in devising aids to the diagnosis of venereal diseases. He played a leading part in investigating the efficacy of arsphenamine. In 1915 he took charge of the Venereal Disease Military Hospital established at Le Havre in the first world war and the only one in France at the time. In the following year he took command of the Military Hospital, Rochester Row, and became adviser on venereal disease to the War Office. From 1919 onward he combined the work of adviser on venereal disease to the Ministry of Health, with directorship of the venereal diseases department, St. Thomas's Hospital.

During his first twenty years at the Ministry of Health considerable progress was made in the control of venereal disease. Clinical attendances indicate that early syphilis decreased by about two thirds between 1920 and 1939. It is estimated that the incidence of venereal disease in British troops stationed in this country in the recent war was only two fifths of the rate in the first world war. But in the recent war there was a steep increase, favored by war conditions, from 1940 onward. Thus the incidence of early syphilis increased from 4,986 in 1939 to 10,741 in 1945. Harrison's last years at the ministry were marked by an energetic campaign against venereal disease. Increased facilities were provided for diagnosis and treatment, and a regulation was made to control the spreader of venereal disease. Harrison is the author of "The Diagnosis and Treatment of Venereal Diseases in General Practice," which has reached a fourth edition, and other books.

SPAIN

(From Our Regular Correspondent)

Madrid, Dec. 24, 1946.

Medical Congresses

DERMATOLOGY

On May 16-18, 1946, the first Hispano-Portuguese Dermatology Congress was held in Valencia, combined with the fourth national meeting of Spanish dermatologists. These assemblies were attended by dermatologists from all parts of Spain, headed by Professors Peyri Rocamora (Barcelona), Gay Prieto (Madrid) and Vilanova (Valencia). The president of the congress was Professor Sainz de Aja. The Portuguese representatives were led by Professor Sa Penella, of Lisbon.

The first report, on leprosy, was divided into three parts: on general pathology of the leprous infection, by Dr. Gonzalez Medina, anatomoclinical forms and classifications of leprosy, by Dr. Contreras Dueñas, and the epidemiologic map of leprosy, by Dr. Berjillos del Rio.

The second report, on psoriasis, was dealt with in four papers: the etiology, pathogeny and internal treatment of psoriasis; by

Dr. Mercadal Peyri, clinical forms, evolution and external treatment of psoriasis, by Dr. Senra Calvo, the pathology of psoriasis, by Dr. Esteller Luengo, and the differential diagnosis of psoriasis, by Dr. Lopez Martinez.

The third report, on penicillin in dermovenereology, was read by Dr. Alvarez Lowell.

Important communications were also read on all these subjects and on eczema, syphilis, gonorrhea, Nicolas-Favre's disease, leishmaniasis, cutaneous tuberculosis, skin tumors, allergic dermatoses, erythematodes acutum, Besnier-Boeck-Schaumann's syndrome, metabolic dermatoses, sclerodermia, pigmentary urticaria and other matters, some of them historical. The members of the congress visited the Lepers' Hospital, for 350 patients, at Fontilles, the best institution of its kind in Spain. Finally, it was agreed to hold the next meeting in Lisbon.

UROLOGY

From June 17 to June 22 the fifth Hispano-Portuguese Urology Congress met in the Royal Academy of Medicine in Madrid under the presidency of Professor Pedro Cifuentes of the Princesa Hospital. Professor Gil Vernet of Barcelona read a paper on carcinoma of the prostate and its treatment, the Portuguese physicians Reynaldo Dos Santos, Bastos, Carneiro, Moraes and Dos Santos Jr. intervening in the debate besides the Spaniards Oreja, Paez, Cifuentes, Picatoste and Puigvert. There were discussions on renal anomalies, sympathetic surgery, penicillin in urology and parathyroid and renal lithiasis. Those taking part were Drs. Ipiens, Moraes, Maza, Moysés, Paez, Serrallach, Da Silva, de la Peña, Laires, Levy, Piñeiro, Ravara, Dos Santos and Dos Santos Jr., Picatoste, Ribeiro, Osuna, Martinez, Martinho, Molina and Alcalá. Surgical demonstrations were presented by Dr. Gil Vernet in the General Hospital, by Dr. Dos Santos Jr., in the Red Cross Hospital and Dr. A. de la Peña in the Ruber Nursing Home. It was agreed to hold the next congress in 1948 in Portugal, with Dr. Cid Dos Santos, for Portugal, expounding the subject of sympathetic surgery in urology and, for Spain, Dr. L. Cifuentes Delatte dealing with nonspecific cystitis. Both these doctors have been doing important work on their respective subjects in the last few years. It is worth pointing out that for this congress the organizing committee was appointed by the Public Health Department of the Ministry of the Interior without any free election of its members, since the appointments thus made for the last congress, held in Cadiz, were canceled by the actual state authorities.

OPHTHALMOLOGY

Finally, between September 9 and 14, we had the twenty-fourth assembly of the Hispano-American Ophthalmology Society at La Toja Spa in Galicia under the presidency of the Catalan professor Dr. H. Arruga, who ultimately withdrew in favor of Dr. E. Diaz Caneja, the director of the Valdecilla Health Center in Santander. There were debates on a long communication on the etiopathogeny of Glaucoma drawn up by Dr. Moreu, assistant professor of ophthalmology in the Valencia Faculty of Medicine; and Drs. E. Diaz Caneja, Soria, Leoz, Marin Amat, Costi and others participated in the discussions. Dr. Echeverri of Santiago de Compostela read a paper on the classic concepts and new ideas concerning the embryology of the eyeball. Many papers were read, special mention being due to Professor B. Carreras Duran's on technical contributions to dacryocystorhinectomy and ocular manifestations of congenital porphyria, Dr. Martin Amat's on the importance of deep suture for the success of dacryocystorhinectomy, Drs. Costi and Larru's on the treatment of ocular neoplasia by Chaoul's x-ray technic, Dr. H. Arruga's on simplified measurable tenotomy. Dr. Leoz Ortin's on postoperative endogenous ocular infections and the cataract operation in high myopia states and Dr. Costi's on peripupillary ectasia of the sclerotic. At the next congress, to be held in 1950, the subject for debate will be introduced by Dr. Mata, who will speak on retrobulbar neuritis.

BRAZIL

(From Our Regular Correspondent)

RIO DE JANEIRO, Jan. 15, 1947.

Cardiac Lesions in Pulmonary Tuberculosis

In a recent paper Dr. Jairo Ramos of the São Luis Gonzaga Hospital of Jassanan, São Paulo, reports a study of 107 cases of cardiac lesions in patients with chronic pulmonary tuberculosis. Among these cases a well characterized cardiac failure was the apparent cause of death, although 31 more cases presented typical hepatic changes as a consequence of right ventricular failure without any other sign of circulatory disturbance. Of the 107 cases, 47 were selected for special study, since they presented dilatation and hypertrophy of the right ventricle, or at least of its arterial orifice. In 20 cases the heart was perfectly normal. It is interesting that the pulmonary lesions were almost equally prevalent in the cases with or without cardiac lesions. Thus the author believes that the type and the extent of the chronic pulmonary lesions do not seem to be the main causative factors of the cardiac changes disclosed by postmortem examination.

In a study of associated lesions in cases with or without cardiac changes, the author concluded that pleural lesions, such as adhesions and partial or total fusion, do not seem to be the main causes of cardiac changes. Pulmonary emphysema seems to be of little import as a cause of disturbance of the right ventricle. Very important are chronic empyema and extensive areas of pulmonary atelectasis, and those anatomic changes did occur more frequently in patients with cardiac lesions, particularly in cases in which dilatation and hypertrophy of the right ventricle were present.

Carcinoma of the Pancreas

Drs. A. Penna de Azevedo and Rita A. Cardoso of the Oswaldo Cruz Institute, Rio de Janeiro, have published a review of 6,823 records of postmortem examinations performed at the Division of Pathology from 1919 to 1944, by Drs. Magarinos Torres, Eudoro Villela, Burle de Figueiredo and Eitel M. Duarte. The report disclosed the existence of 686 cases of cancer of different organs, among which were 28 of primary carcinoma of the pancreas, giving a rate of 0.4 per cent of primary carcinoma of the pancreas in the total number of postmortem examinations and of 4.1 per cent in the series of cases of cancer. The tumor was localized in the head of the pancreas in 20 of the cases (71.4 per cent), in the tail in 1 case (3.5 per cent) and was diffuse in 5 cases (17.8 per cent). There was no record of location in 2 cases (7.1 per cent). The predominant histologic type was the adenocarcinoma, recognized in 21 of the cases (75 per cent), the rest being of acinous carcinoma. As a rule the cirrhotic type was observed, and in some of the cases the formation of mucin was conspicuous.

The incidence of metastases was 95 per cent (20 cases) in the 21 cases of adenocarcinoma, and 100 per cent (7 cases) in the cases of acinous carcinoma. The incidence rate of metastases in the different organs, in decreasing order, was liver and lymph nodes 70.3 per cent each, peritoneum 25.9 per cent, lungs 22.2 per cent, adrenals 18.5 per cent and the pleura, spleen and kidneys 7.4 per cent each. In only 1 of the cases metastasis was not present. The largest concentration of cases occurred in the age group 40-59 years, with 11 cases, or 39.3 per cent, of the total.

Death of Dr. Estellita Lins

Dr. A. Estellita Lins, a urologist and professor at the Faculdade de Ciencias Medicas of Rio de Janeiro, died at the age of 57. Dr. Lins, a member of the Brazilian College of Surgeons and of the National Academy of Medicine, had served in the medical corps of the Brazilian Expediti Force in Italy during the war.

Bureau of Investigation

MISBRANDED PRODUCTS

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the Federal Security Agency

[EDITORIAL NOTE—These Notices of Judgment are issued under the Food, Drug and Cosmetic Act, and in cases in which they refer to drugs and devices they are designated D D N J. and foods, F. N J The abstracts that follow are given in the briefest possible form (1) the name of the product, (2) the name of the manufacturer, shipper or consigner, (3) the date of shipment; (4) the composition, (5) the reason for the charge of misbranding, and (6) the date of issuance of the Notice of Judgment—which is considerably later than the date of the seizure of the product and somewhat later than the conclusion of the case by the Food and Drug Administration]

Armstrong's Drops—F E Bucklin Company, Los Angeles Labeled in part 'Manufactured for Armstrong Drop Co, So Pasadena, Cal" Shipped May 17 and Oct 27, 1943 Misbranded because label failed to give accurate statement of quantity of contents, which were less than declared amount—[*D D N J, F D C 1238, June 1945*]

Beawun Vitamin B_1 Tablets—American Nutrition Company, Chicago Shipped May 18, 1943 Composition approximately 1 milligram of vitamin B_1 per tablet Misbranded because falsely represented in labeling to prevent and correct digestive disorders, neuritis, beri beri, delirium tremens and many other disorders—[*D D N J, F D C 1242, June 1945*] Also misbranded under provisions of the law applicable to foods, as reported in *F N J 7338*

Class' Vitamin, Mineral and Herb Formula.—Granville Class Laboratories, Dayton, Ohio Shipped Aug 19 and 25, 1943 Composition water, glycerin and alcohol, caffeine, phosphate compounds plant extractives and a trace of saccharin Misbranded because label falsely represented product to be valuable for its vitamin and mineral content, correcting poor health, nervousness and poor appetite through its vitamins, minerals and herbs, whereas it was not a significant source of these elements—[*D D N J, F D C 1243 June 1945*] Also misbranded under provisions of the law applicable to foods, as reported in *F N J 7342*

Colestin Natural Mineral Water.—Colestin Mineral Water Company, Medford, Ore Shipped Sept 8, 1943 Composition about 0 29 per cent of dissolved mineral matter reported Misbranded because label falsely represented product as effective for kidney, stomach and rheumatic troubles, biliousness and similar conditions—[*D D N J, F D C 1183 June 1945*]

Dextro-Quinine—Distributor not reported Shipped Aug 27, 1942 Composition plant extractive material, about one half of which had alkaloidal characteristics Misbranded because name falsely represented that product was quinine or a dextro rotatory isomer of quinine—[*D D N. J, F D C 1140, June 1945*]

Dr. Marshall's Scalp Medications—T Noonan & Sons Company, Boston Shipped May 28 and July 30, 1943 Treatment consisted of four products Scalp Cream No 1 was a mixture of sulfur, salicylic acid and tar oils in a base of petrolatum and lanolin Misbranded because label falsely represented product as efficacious in treating oily dandruff and psoriasis Scalp Cream No 3 contained sulfur, balsam of Peru and betanaphthol in a petrolatum and lanolin base Misbranded because falsely represented as efficacious in treating falling hair or bald spots Scalp Lotion A consisted essentially of betanaphthol, quinine, resorcinol and a saponifiable oil such as castor oil, with alcohol and water Falsely represented as a competent treatment for psoriasis or oily dandruff Scalp Lotion B was a mixture of betanaphthol, resorcinol, alcohol and water, perfumed with aromatic oils Misbranded because falsely represented as an efficacious treatment of oily hair, oily dandruff or psoriasis The two Lotions were further declared misbranded because labels did not declare amount or proportion of alcohol present—[*D D N J F D C 1239, June 1945*] In the same month another Notice of Judgment (*D D N J, F D C 1193*) was issued against Scalp Lotion A and Scalp Lotion B

Ell-606 Capsules—Ainsworth Specialty Company, Kansas City, Mo Shipped Jan 21, 1943 Composition in each capsule 0 154 grain of sodium cacodylate, 0 89 grain of methenamine, 0 386 grain of acetanilid, 0 49 grain of calcium phosphate, and 0 476 grain of sodium phosphate Adulterated because most ingredients were present in smaller amounts than declared on label Misbranded for the same reason, and because of label misrepresentations as to product's efficacy as a urinary antiseptic, blood cleanser and substitute tor, or supplement to, intravenous medication in venereal and other diseases—[*D D N J, F D C 1151, June 1945*]

Fairyfoot for Bunions—Fairyfoot Products Company, Chicago Shipped August 6 and Nov 17, 1943 *Composition* adhesive plaster pads containing benzocaine and a small amount of an iron compound Misbranded because of false label representation that product was effective in stopping the pain and reducing the size of a bunion—[*D D N J, F D C 1236, June 1945*]

Golden Key Antiseptic Medicated Cream—Windsor Chemical Laboratories, Philadelphia Shipped July 12, 1943 Composition not reported Misbranded because label failed to bear accurate statement of quantity of contents—[*D D N J, F D C 1240, June 1945*]

Hamby's Dawson Springs Water—*Dawson Springs Water Company, Inc*, Dawson Springs, Ky Shipped March 25, 1943 Composition essentially epsom salt, sodium sulfate, and water, with small amounts of sodium chloride and calcium sulfate Misbranded because, among other things, label did not warn that a laxative should not be used when abdominal pains nausea, vomiting or other symptoms of appendicitis are present, and because labeling falsely represented, among other things, that the product was essentially a natural spring water, an alterative and blood tonic, would heal mucous membranes and help many disorders, including diabetes, liver and kidney complaints, rheumatism, Bright's disease and gallstones—[*D D N J, F D C 1155, June 1945*]

Nelson's Antacid Powder—Cleveland Druggists Specialties Company (Great Lakes Laboratories), Cleveland Shipped May 25, 1942 Composition essentially compounds of sodium, calcium, magnesium and carbonate Adulterated because strength was not as represented, since product purported to contain bismuth salts, but did not Misbranded because label falsely declared "Bismuth Salts in the form of Carbonates Subnitrates" and falsely suggested that product would effectively treat gastric ulcers and other stomach disorders would convert all protein foods, such as meats and albumens, into soluble and readily absorbed peptones and all starchy foods into soluble dextrins and sugars, further misbranded because label did not accurately declare quantity of contents—[*D D N J F D C 1201, June 1945*]

Rainier Natural Soap—Rainier Natural Soap Company, South Boston, Mass Shipped June 30, 1943 Composition approximately 32 per cent of soap and 68 per cent of pumice or similar material Misbranded because falsely represented in labeling as a naturally occurring soap which would prevent or effectively treat eczema, rashes poison ivy, chafing, itching and burning skin conditions, blackheads, pimples and other disfiguring blotches— *D D N J, F D C 1195, June 1945*

Sano—Sano Medicine Company, Cleveland Shipped Feb 7, 1943 Composition a brown liquid with sediment, containing water, alcohol and plant extractives, including emodin bearing drugs and a trace of unidentified alkaloids Misbranded because label falsely represented that product was a diuretic and a tonic and would help to relieve rheumatism and to eliminate poisons, besides removing the cause Further misbranded because label did not adequately warn that the product was a laxative, should be taken only occasionally and as needed, and not used when abdominal pain, nausea, vomiting or other symptoms of appendicitis are present, or that frequent or continued use might lead to a dependence on laxatives—[*D D N J, F D C 1154, June 1945*]

Special Formula Tablets #2—Made by Arner Company, Inc, Buffalo, for Paul Case, Brockton Mass *Shipped July 3 and August 7, 1941.* Composition an extract of a laxative plant drug, such as cascara sagrada, with sodium bicarbonate and sodium citrate Misbranded because label did not bear common names of active ingredients or directions for use, and failed to warn that product should not be taken when abdominal pain, nausea, vomiting, or other symptoms of appendicitis are present—[*D D. N J, F D C 1157, June 1945*] Mention was also made of Paul Case's "Combination New Improved Method for 'Rheumatic' Pains" Paul Case's mail order "rheumatism cure' was exposed in *The Journal* Jan 12, 1924, page 145

Templeton's Raz-Mah Capsules—Templeton's, Inc, Buffalo Shipped Nov 10, 1943 Composition essentially aspirin 4 12 grains per capsule, caffeine 0 69 grain per capsule, and capsicum, charcoal and extracts of unnamed plant drugs Misbranded because labeling falsely represented product to be effective treatment or relief of symptoms of hay fever, bronchial irritations and coughs due to these or colds and also safe and helpful in asthma—[*D D N J, F D C 1234, June 1945*]

Vit-an-Min—S & R Laboratories, Inc, Chicago Shipped April 20, 1943 Composition a light brown, powdered material essentially containing vitamins A, D, B_1 and riboflavin, with calcium, phosphorus and iron Misbranded because label falsely represented that product would give the user health and beauty, insure normal functioning, correct abnormalities of brain and glands and cure or mitigate numerous other disorders—[*D D N J, F D C 1241, June 1945*] Also misbranded under provisions of the law applicable to foods, as reported in *F N. J. 7347*

Vita-Pure B-Complex Vitamins—Roisman Products Company, Oklahoma City, Okla Shipped March 30, 1943 Composition each tablet contained approximately the 333 U S P units of vitamin B_1 declared on label, but not more than 266 U S P units of vitamin B_1, whereas label declared 333 units Misbranded because label falsely represented that product would prevent or correct loss of appetite, mental depression, skin disorders, neuritis and some other things, that it would help keep one feeling fit, and that one tablet per day would afford the average minimum requirements of adults for B complex vitamins—[*D D N J, F D C. 1185, June 1945*] Also misbranded under provisions of the law applicable to foods, as reported in *F N J 7000*

Von's Tablets—George Von Neida, St Paul Shipped Dec 9, 1942, from Minneapolis to San Francisco Von Company, which relabeled part of consignment "Von's Pink Tablets" Composition in each tablet essentially 4 6 grains of bismuth subnitrate, 6 5 grains of magnesium oxide, and 5 4 grains of sodium bicarbonate Misbranded because accompanying booklets falsely represented that tablets, when used as directed, constituted *an adequate treatment* for gastritis and ulcers caused by gastric hyperacidity—[*D D N J, F D C 1233, June 1945*]

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Selective Service Act: Right of Discharged Army Medical Officer to Employment Held Prior to Entering Service.—This was an action under the reemployment provisions of the selective training and service act of 1940 to compel the reinstatement of the plaintiff as medical director of the defendant company. The case was heard in the United States district court, D., New Jersey.

In 1934 the plaintiff was employed as the chief company physician of the defendant corporation. At the time of his employment he occupied a desk in an office shared with the defendant's safety director, claims investigator and welfare director. He revised medical forms used by the company, was responsible for the designation of physicians' for preemployment examinations in various localities and made these examinations himself on applications for employment from persons residing in the vicinity of Asbury Park, N. J., for which he received fees in addition to his monthly salary. At the company office he did only executive work in the nature of reviewing files on compensation cases, noncompensable cases and preemployment medical records. His gross yearly income from this and other sources averaged $20,000 to $24,000. He testified that he had appeared daily (but according to his own time schedule) at his office in defendant's plant, his visits averaging a minimum of fifteen minutes and a maximum of one and one-half hours. During his employment he received no instructions, was never criticized and received only commendation for his work.

He entered the United States Army Oct. 6, 1942 and was discharged Nov. 28, 1945, his terminal leave expiring Feb. 2, 1946. Prior to his entry into the service he had discussed the question of leave of absence with company officials and had been advised by letter by the vice president as follows:

> So far as leave of absence is concerned you have it, of course, but, I am forced to add, for what it may be worth. Conditions are such that I cannot avoid the qualification inasmuch as your office is an appointive one and upon your return must be disposed of by those who then may be in charge. I need not reassure you that if Tom and I are still in the picture and needs require it, you will surely be back to your old post.

In 1944 the ownership of the defendant company changed, so the defendant changed insurance carriers to the one generally used in the new system of ownership. The department formerly supervised by the plaintiff is no longer operated by the defendant, since the present carrier employs counsel and medical examiners of its own choosing. When accidents occur now defendant makes a report to the carrier, and the carrier handles the matter from that point on. Review of records of preemployment examinations formerly made by the plaintiff is now done by the defendant's safety department and if any question arises it is referred to the examining physician. Review of noncompensable cases formerly made by the plaintiff is now handled by defendant's welfare department. The defendant's vice president testified that under the present arrangement there is neither place nor need for the medical activities previously performed by the plaintiff.

The plaintiff's claim was based on the following section of the selective training and service act:

> (B) if such position was in the employ of a private employer, such employer shall restore such person to such position or to a position of like seniority, status, and pay unless the employer's circumstances have so changed as to make it impossible or unreasonable to do so;

and the defendant contended among other things that its circumstances had so changed as to make it impossible or unreasonable to reengage the services of the plaintiff. The plaintiff argued that all the work that he formerly did is still performed, but through a change in company policy it is not done by defendant but by the carrier, and the plaintiff therefore contends that the defendant has, in effect, replaced his services by another.

In 1944, said the court, there was virtually a new ownership of this defendant. Its contract of insurance having expired, a new insurer, common to the new ownership's chain of companies, designed for the defendant a new pattern for insuring against losses. This new pattern did away not only with the plaintiff's position but the positions of the investigator and counsel as well. We are convinced, the court concluded, that this was carried out in good faith. Thus the defendant's circumstances were so changed as to make it unreasonable to compel the defendant to reemploy the plaintiff in a position the principal duties of which have completely disappeared. Accordingly the plaintiff's complaint was dismissed.—*Featherston v. Jersey Central Power & Light Co., 66 F. Supp. 882 (N. J., 1946).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS
EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Boards in Specialties were published in The Journal, Feb. 15, page 498.

BOARDS OF MEDICAL EXAMINERS

Arkansas: * *Medical. Examination.* June 5-6. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, June 5. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

California: *Examination.* Los Angeles, March 10-13. Sec., Dr. Frederick N. Scatena, 1020 N. St., Sacramento 14.

Connecticut: * *Medical. Examination.* Hartford, March 11-12. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven. *Homeopathic.* Derby, March 11. Sec., Dr. J. H. Evans, 1488 Chapel St., New Haven.

Georgia: Atlanta and Augusta, June. Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

Indiana: *Examination.* Indianapolis, June. Exec. Sec., Board of Medical Registration and Examination, Miss Ruth V. Kirk, 627 K. of P. Bldg., Indianapolis.

Iowa: * *Examination.* Iowa City, March 17-19. Corresponding Sec., Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

Kansas: *Examination.* Kansas City, March 25-26. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. Seventh St., Kansas City 10.

Maine: Portland, March 11-12. Sec., Board of Registration of Medicine, Dr. A. P. Leighton, 192 State St., Portland.

Massachusetts: Boston, March 11-14. Sec., Board of Registration in Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston 33.

Montana: Helena, April 1-2. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.

Nebraska: * *Examination.* Omaha, June. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, State Capitol Bldg., Lincoln.

Nevada: *Examination.* Carson City, May 5. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

New Hampshire: Concord, March 13. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

New Jersey: Trenton, June 17-18. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

New Mexico: * Santa Fe, April 7-8. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

North Carolina: *Endorsement.* Winston-Salem, April 30, June 24. *Examination.* Raleigh, June 23-26. Acting Sec., Mrs. L. McNeill, 226 Hillsboro St., Raleigh.

Ohio: *Examination.* Columbus, June 17-20. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

Pennsylvania: Philadelphia and Pittsburgh, July. Acting Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

South Carolina: Columbia, June 23-25. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

Texas: *Examination.* Galveston, Feb. 20-22. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

---

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Arizona: March 18, Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

District of Columbia: Washington, April 21-22. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

Florida: May 31. Final date for filing application is May 16. Sec., Dr. M. W. Emmel, University of Florida, Gainesville.

Iowa: Des Moines, April 8. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

Oklahoma: Oklahoma City, March 17. Pres. Dr. Sam A. McKeel Ada.

Oregon: Portland, March 1. Sec., Board of Higher Education, Mr. C. D. Byrne, University of Oregon, Eugene.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps *to cover postage* (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Alabama State Medical Assn. Journal, Montgomery

16:193-220 (Dec.) 1946

Physician's Responsibility to Society. C. Sparks.—p. 193.
Prevention of Conduction Deafness. G. E. Fisher.—p. 196.
Importance of Anorectal Region. W. J. Rosser.—p. 198.
Use of Voorhees Bag to Induce Labor and to Facilitate Delivery in Prolonged Labor: Report of 100 Cases. T. M. Boulware and C. D. Howe.—p. 201.

American Journal of Diseases of Children, Chicago

72:501-634 (Nov.) 1946

*Clinical Immunity in Poliomyelitis. E. M. Bridge, G. H. Clarke and Doris Abbe.—p. 501.
*Familial Glycogen Disease: Report of 4 Fatal Cases of Hepatic Form of Disease in Siblings of One Family. H. Abramson and L. D. Kurtz.—p. 510.
*Pneumatocele During Course of Pneumonia in Children. J. H. Almklov and A. Hatoff.
*Urethritis in Girls. P. R. Roen and R. R. Stept.—p. 529.
Carcinoma of Adrenal Cortex with Adrenogenital Syndrome in Children: Complete Review of Literature and Report of Case with Recovery in Child 8 Months of Age. A. E. Goldstein and J. A. Askin.—p. 563.

Clinical Immunity in Poliomyelitis.—Bridge and his associates report 4 cases in which second attacks of poliomyelitis occurred and of 2 cases in which second attacks probably occurred. The proportion of these cases to the total epidemic of 1944 in the area around Buffalo is such as to cast doubt on the existence of significant acquired immunity. When reexposed to the disease some persons who have had poliomyelitis may have abortive poliomyelitis. From the literature it is also evident that one attack of poliomyelitis in experimental animals does not confer immunity against subsequent infection. It appears inadvisable to rely on acquired immunity to protect persons who may be in close contact with patients.

Familial Glycogen Disease.—Abramson and Kurtz report histories and pathologic examinations of 4 siblings of Jewish parentage who died during early infancy from glycogen storage disease of the von Gierke form. There was no evidence of direct transmission of the disease from the parents, nor could consanguinity of the parents be demonstrated. Four of 6 children in this family had the disease and in each of them the symptoms dated from birth. Abdominal distention, enlargement of the liver and respiratory distress were the principal symptoms. Contrary to the accepted opinion of a not unfavorable prognosis in glycogen disease, the 4 children died, 1 on the fourth day, 2 at 3 months and 1 at 4 months of age.

Pneumatocele During Pneumonia in Children.—According to Almklov and Hatoff x-ray examination frequently discloses the occurrence of a cavity in the lung during the course of pneumonia in children. The cavity has a sharply defined thin border and, in a large number of cases, an air-fluid level. These cavities are variously called pneumatoceles, emphysematous bullae or benign cavities, the authors preferring the term pneumatocele. They report 7 cases and stress that the demonstration of pneumatocele depends on the taking of serial roentgenograms of the chest during the course of the pneumonia. The mechanism consists of check valve action of bronchiole mucosa involved in the inflammatory process of pneumonia. The differential diagnosis is simplified by the benign, ephemeral character of the lesion. In the uncomplicated case no therapy is indicated.

Urethritis in Girls.—Roen and Stept direct attention to a little recognized entity, that of urethritis in girls, productive of a number of urinary symptoms generally attributed to pathologic changes of the upper urinary tract. Illustrative reports of cases are given to show the wide variation in symptoms that may be present, although the same pathologic features of chronic inflammatory urethral change characterize all the cases. Diagnosis is made by direct observation with the cystoscope and elimination of the upper urinary tract as a causative factor. Treatment consists in dilation of the urethra.

American Journal of Medical Sciences, Philadelphia

212:513-640 (Nov.) 1946

*Complications Following Administration of Thiouracil. W. H. Beierwaltes and C. C. Sturgis.—p. 513.
Studies on Penetration of Sulfonamides into Skin: III. Penetration of Sulfanilamide and Sulfathiazole into Intact and Injured Skin of Guinea Pigs from Various Vehicles, Including Polyethylene Glycols ("Carbowax"). W. G. Clark.—p. 523.
Adrenotropic, Renotropic and Cardiotropic Activities of Lyophilized Anterior Pituitary in Thyroidectomized Rats. E. C. Hay.—p. 535.
Atabrine and Electrocardiogram. H. D. Levine and H. Erlanger.—p. 538.
Severe Allergic Reactions to Penicillin. T. H. Mendell and P. H. Prose.—p. 541.
Isolation of Glucose Containing Cerebroside from Spleen in Gaucher's Disease. M. S. Sacks and Marie A. Andersch.—p. 546.
*Combined Quinine-Plasmochin Treatment of Vivax Malaria: Effect on Relapse Rate. H. Most, C. A. Kane, P. H. Lavietes, I. M. London, E. F. Schroeder and J. M. Hayman.—p. 550.
Venous Thrombosis After Infusion with Gelatin Solutions Containing Mercurial Preservatives. A. J. Patek Jr., F. E. Kendall, J. Victor, Alice Lowell, H. Colcher and D. Seegal.—p. 561.
Disseminated Coccidioidomycosis Localized in Bone. D. Sashin, G. N. Brown, N. C. Laffer and H. C. McDowell, with assistance of H. C. McDowell.—p. 565.
Vitamin A and Carotene Metabolism in Diabetic as Reflected by Blood Levels. Marian S. Kimble, O. A. Germek and E. L. Sevringhaus.—p. 574.
Recurrent Fatal Hemolytic Anemia Associated with Gross Liver Damage and Splenomegaly. R. S. Stacey.—p. 586.
Convalescence from Surgical Procedures: III. Relation of Nitrogen Balance and Blood Volume to Abnormalities of Circulation. R. L. Mayock, C. E. Koop, C. Riegel, N. T. Kough and I. Starr.—p. 591.
Postural Heart Block. I. Stein.—p. 604.
Pulmonary Infiltrations with Associated Eosinophilia. F. M. Willett and E. Oppenheim.—p. 608.
Drugs Used in Clinical Diagnosis (Part II): Review of Recent Literature. M. Pearlmutter.—p. 613.
Roentgenologic Diagnosis of Certain Congenital Lesions of Heart and Great Vessels. D. G. Pugh.—p. 628.

Complications Following Thiouracil.—Beierwaltes and Sturgis have collected 9 fatalities occurring during or following thiouracil administration. A review of 7 fatal cases of agranulocytosis associated with the administration of thiouracil shows that there are at least five important factors that contribute to the fatal outcome. These include failure to administer penicillin promptly, failure to discontinue the drug after the onset of symptoms, disregard of significant symptoms of impending agranulocytosis, inefficacy of various forms of therapy for agranulocytosis and failure to discontinue thiouracil when a severe leukopenia develops. The authors also discuss nonhematologic reactions which require cessation of thiouracil and reactions not usually requiring discontinuance of thiouracil. The most satisfactory method of preventing fatalities from agranulocytosis is to warn the patient who is taking thiouracil to discontinue the drug promptly on the appearance of fever with or without sore throat, skin rash or adenopathy. If a white blood cell count and estimation of the neutrophil percentage show a significant depression of the cells, penicillin should be administered until the blood count becomes normal again. Thiouracil therapy may then be resumed, but there is a risk of recurrence.

Combined Quinine and Plasmochin Treatment of Vivax Malaria.—According to Most and his associates a striking feature of vivax malaria of Pacific origin is its tendency to relapse after treatment with the malarial drugs currently in use. The authors are concerned with the effect on subsequent relapse following the simultaneous quinine and plasmochin treatment. Quinine sulfate 1 Gm. and plasmochin naphthoate 0.02 Gm. simultaneously at eight hour intervals for one day followed by quinine 0.65 Gm. and plasmochin naphthoate 0.02 Gm. simultaneously at eight hour intervals for the next thirteen days were administered to 72 white patients with acute attacks of vivax malaria of Pacific origin who were followed for at least 120 days after treatment. The clinical relapse rate and total failure rate during 120 days' observation was 4 and 11.1 per cent respectively. This is in sharp contrast to clinical relapse rates of 75 to 85 per cent and total failure of 85 to 90 per cent based on similar observations after treatment of more than 500 patients for acute attacks of vivax malaria of Pacific origin treated with quinine, quinacrine or other antimalarial drugs. No serious toxic manifestations were observed in patients who received combined quinine and plasmochin therapy.

American Journal of Tropical Medicine, Baltimore

26:749-870 (Nov.) 1946

An Attempt at Active Immunization with Plasmodium Vivax Killed in Vivo. M. F. Boyd and S. F. Kitchen.—p. 749.
Studies on Atabrine Suppression of Malaria: II. Evaluation of Atabrine Suppression in the Field. F. B. Bang, N. G. Hairston, J. Maier and W. Trager.—p. 753.
Relapsing Fever on Isthmus of Panama: Report of 106 Cases. C. Calero.—p. 761.
Biologic Studies on Endameba Histolytica: I. Growth Cycle of Populations in Mixed Bacterial Flora. W. Balamuth and Betty Howard.—p. 771.
Cultivation of Endameba Histolytica in Artificial Media from Cysts in Drinking Water Subjected to Chlorination. E. R. Becker, C. Burks and E. Kaleita.—p. 783.
Studies of Dissemination of Cysts and Ova of Human Intestinal Parasites by Flies in Various Localities on Guam. A. H. Harris and H. A. Down.—p. 789.
Pulmonary Manifestations of Schistosomiasis Caused by Schistosoma Japonicum. H. B. Weinberg and A. J. Tillinghast.—p. 801.
Diagnosis of Schistosomiasis Mansoni by Rectal Biopsy Technic. F. Hernandez-Morales and J. F. Maldonado.—p. 811.
Effect of Sulfadiazine on Cholera. L. W. Chu and C. H. Huang.—p. 821.
Sulfonamide Drugs in Treatment of Cholera. L. W. Chu, C. H. Huang, C. T. Chang and H. C. Kao.—p. 825.
*Treatment of Bubonic Plague with Sulfadiazine. C. H. Huang and L. W. Chu.—p. 831.
DDT Control of Synosternus Pallidus Taschenberg (Siphonaptera, Pulicidae) in Dakar, Senegal, French West Africa. L. Kartman.—p. 841.
Laboratory Infection of Rat with Filarial Worms. J. A. Scott and Joy Barnes Cross.—p. 849.

Sulfadiazine in Bubonic Plague.—Huang and Chu studied the efficacy of sulfadiazine in bubonic plague in Fukien, China, in the summer of 1944. From the beginning of June to July 18, when their study began, 56 of 109 plague patients had died, giving a mortality rate of 51.4 per cent. Sixteen of the 25 cases treated by them were treated with sulfadiazine alone, 3 with sulfadiazine plus antiplague serum, 4 with sulfathiazole and serum at first but later with sulfadiazine and 2 with sulfathiazole alone. There were 5 fatalities—3 deaths among patients treated with sulfadiazine and 2 deaths among those treated with sulfadiazine plus serum. While admittedly a small series, the results are sufficiently striking to show the excellent therapeutic value of sulfadiazine in the treatment of bubonic plague.

Archives of Internal Medicine, Chicago

78:497-628 (Nov.) 1946

Pathogenesis of Cirrhosis of Liver Occurring in Patients with Diffuse Toxic Goiter. E. Moschcowitz.—p. 497.
*Canicola Fever: Case Report and Review of Literature. H. D. Rosenbaum.—p. 531.
*Clinical Aspects of Calcification of Mitral Annulus Fibrosus. D. A. Rytand and L. S. Lipsitch.—p. 544.
*Erysipelothrix Rhusiopathiae Infection in Man: Report of Case with Cutaneous Bullae in Which Cure Was Achieved with Penicillin. J. C. Ehrlich.—p. 565.
*Actinomycosis Due to Nocardia Asteroides: Report of 2 Cases. W. M. M. Kirby and J. B. McNaught, with technical assistance of Gail S. Reeves.—p. 578.
Syphilis: Review of Recent Literature. F. W. Reynolds and J. E. Moore.—p. 592.

Canicola Fever.—Rosenbaum reports that a man aged 44 was hospitalized on the sixth day of illness, when he appeared jaundiced and acutely ill. On the thirteenth hospital day it was learned that the patient's dog had been suffering from a severe illness for the preceding two months. The patient was in the habit of fondling the dog. The serums of patient and dog were found to agglutinate Leptospira canicola to a dilution of 1:100,000 and Leptospira icterohemorrhagiae to 1:1,000. Leptospiras were never seen in the patient's blood. They were found repeatedly in the patient's urine.

Calcification of Mitral Annulus Fibrosus.—Rytand and Lipsitch present observations made during the lives of 10 elderly patients with calcification of the mitral annulus fibrosus. None had a history of rheumatic fever. Atherosclerosis was severe. Congestive heart failure occurred in 5 patients. Arterial hypertension was present in practically every case but was not severe. Four of the 5 patients with complete heart block have died, but only 1 of those without block has died. There was a moderate or a loud, rough murmur with ventricular systole in 7 of the patients. In the 4 ambulatory patients of the 5 with heart block there was a blowing apical murmur, related to auricular activity, during ventricular diastole; auricular sounds of uncertain nature were recorded for the fifth. This murmur did not occur in the patients with normal auriculoventricular conduction, but it has been noted in other elderly patients with heart block and without x-ray evidence of calcification. Calcification of the mitral annulus fibrosus may be suspected in elderly persons after the finding of heart block and an apical murmur associated with auricular activity during ventricular diastole.

Erysipelothrix Infection.—Ehrlich reports the history of a farmer who was hospitalized four days after he had slaughtered a sick hog. His erysipelothrix infection was distinguished clinically by the extremely rapid dissemination of the eruption, the severe pruritus and the development of huge bullae. These features and the microscopic observations, particularly the swelling of the collagen, the numerous eosinophils in the infiltrate, the capillary engorgement and the serohemorrhagic edema of the dermis, indicate that the unusual manifestations of the disease may have had an allergic basis. A previous erysipelothrix infection of localized character probably induced the hyperergic state. Intensive treatment with penicillin effected recovery.

Actinomycosis Due to Nocardia Asteroides.—According to Kirby and McNaught infections in man due to the aerobic, partially acid fast Nocardia asteroides are rare as compared to those due to the anaerobic Actinomyces bovis. The symptoms, course of the disease and response to therapy are so nearly alike that the disease produced by the two types of fungi should be called actinomycosis. The mortality of Nocardia asteroides is high, as is indicated by the fact that in 28 of the 32 cases collected from the literature death had occurred when their reports were published. The infection was pulmonary in 28 cases, and the brain was the site of metastasis in at least 10. Two new cases of infection with N. asteroides are added in this report. It is recommended that patients with actinomycosis due to the aerobic N. asteroides be treated with the sulfonamide compounds and penicillin as vigorously as are those infected with the anaerobic Actinomyces bovis and that surgical drainage, iodides and roentgen therapy be used as the indications arise.

Bull. of the U. S. Army Med. Dept., Washington, D. C.

6:637-780 (Dec.) 1946

Management of Thoracic Wounds in Overseas Theater. P. C. Samson.—p. 711.
Battle Injuries of Colon and Rectum. L. E. Hurt.—p. 729.
Effect of Battle Casualties on Serodiagnostic Tests for Syphilis. W. R. Talmage, C. W. Dunn and E. L. Breazeale.—p. 741.
Designing Plastic-Base Partial Dentures. H. N. Burgin.—p. 745.
*Streptomycin in Intestinal Infections. E. J. Pulaski and W. H. Amspacher.—p. 750.
Experimental Study of Air Blast Injuries. S. M. Horvath and W. B. Shelley.—p. 761.
Para-Articular Calcification in Lower Extremities of Paraplegic Patients. W. C. Ward.—p. 771.

Streptomycin in Intestinal Infections.—Pulaski and Amspacher used streptomycin in 8 cases of bacillary dysentery. Two were due to Salmonella, 1 to Shigella sonnei and the remainder to various subtypes of Shigella flexneri. Beneficial effects are obtained by the use of streptomycin orally or parenterally in infections found resistant to the sulfonamides. Doses of 1 to 4 Gm. for periods ranging from three to sixteen days are effective in most cases; the larger amounts are recommended to minimize the risk of the development of streptomycin resistant organisms. Since the offending bacteria are not confined to the lumen of the bowel but may penetrate into deep crevices and mesenteric lymph nodes, it is recommended that the combined oral and parenteral routes be used

California Medicine, San Francisco

65:201-264 (Nov.) 1946

Analysis of 402 Cases of Carcinoma of Breast. Evelyn Siris and L. Dobson.—p. 201.
Diagnostic Problems in Luetic Cardiovascular Disease. S. P. Lucia and W. N. Sears.—p. 207.
Physiology of Traumatic Reflexes and Respiration During Surgical Anesthesia: Observations Made Under Pentothal and Local Nerve Block. J. C. McCann.—p. 212.
*Treatment of Acute Throat Infections, with Special Reference to Use of Penicillin. R. E. Faucett, M. P. Thomas and J. C. Ruddock.—p. 218.
Trends in Age Distribution of Childhood Diseases. E. M. Bingham. —p. 225.
Methanol Poisoning. E. Bogen.—p. 230.
Comparative Roentgenographic and Microscopic Patterns in Bone Tumors. I. MacDonald.—p. 234.
Medical Progress: Recent Progress in Treatment of Thromboembolic Disease. N. E. Freeman.—p. 236.

Penicillin in Acute Throat Infections.—Faucett and his associates discuss the therapeutic measures used in the treatment of 561 cases of acute infections of the throat. Penicillin ice cream, 25,000 units every three hours, has been offered as a therapeutic measure for the treatment of acute tonsillitis, pharyngitis, scarlet fever throats and Vincent's infections of the throat and mouth. This method of administration may be used for other infections caused by organisms susceptible to penicillin. Streptococcus antitoxin serum 18,000 units followed by penicillin ice cream 25,000 units every three hours for five to seven days has been recommended as the treatment of choice for scarlet fever. Massive parenteral doses of penicillin without surgical intervention is preferred for proper management of peritonsillar abscess unless spontaneous drainage is imminent. Penicillin parenterally and sulfonamides intravenously (later orally) are recommended for certain overwhelming and fulminating infectious diseases, including those of the throat.

Delaware State Medical Journal, Wilmington

18:221-242 (Oct.) 1946

Dissemination of Information to Public on Ideals of Medical Care. W. C. Deakyne.—p. 221.
Mental Hygiene in Children. F. H. Allen.—p. 223.
Pulmonary Infarction: Case Report with Postmortem Findings. C. K. Wintrup.—p. 229.
Congenital Atresia of Intestinal Tract: Report of 2 Cases. H. S. Rafal. —p. 232.
Limitations of Electrocardiography. A. H. Clagett Jr.—p. 236.

Florida Medical Association Journal, Jacksonville

33:291-342 (Dec.) 1946

Abdominal Incisions and Suture Materials. V. A. Lockwood.—p. 311.
Malaria: Diagnosis, Suppressive Measures and Treatment. C. O. Anderson.—p. 316.
Abdominal Pregnancy, with Report of Case. R. C. Polk and H. M. Anderson.—p. 320.

Georgia Medical Association Journal, Atlanta

35:307-342 (Nov.) 1946

Occupational Dermatitis. C. Shaw.—p. 307.
Disorders Frequently Found When Examining Chest. J. A. Redfearn. —p. 310.
Some Interesting Allergic Cases. E. C. Jones, M. I. Lowance and W. B. Matthews.—p. 311.
Effective Contraceptive: Phenylmercuric Acetate Jelly. Amey Chappell. —p. 314.
Treatment of Bartholin Abscess (or Cyst). E. H. Greene.—p. 315.
Report on Progress of Public Health in Georgia. T. F. Abercrombie. —p. 318.
Tribute to Dr. Cleveland Thompson. E. R. Pund.—p. 322.
In Memoriam. A. J. Mooney.—p. 323.
Undulant Fever, Increasing Menace to Health in Georgia. C. E. Zimmerman.—p. 326.
Staphylococcus Hemolyticus Bacteremia: Report of Case with Recovery. I. B. Cantor.—p. 328.

Geriatrics, Minneapolis

1:409-472 (Nov.-Dec.) 1946

Some Applications of Physical Medicine in Geriatrics. F. H. Krusen and Ursula M. Leden.—p. 409.
Management of Pain in the Aged. E. M. Papper and E. A. Rovenstine. —p. 420.
Geriatric Service in General Hospital. T. H. Howell.—p. 427.
Management of Carcinoma of Prostate. L. H. Baretz.—p. 432.
Ophthalmoscopic Differentiation of Arteriolar Sclerosis: Hypertensive and Atheromatous. F. L. P. Koch.—p. 438.
Health Guidance in Advancing Years. W. F. King.—p. 442.
History of Coronary Artery Disease. G. F. Greco.—p. 449.

Iowa State Medical Society Journal, Des Moines

36:509-548 (Dec.) 1946

Treatment of War Injuries of Hand in U. S. Army. J. M. Bruner. —p. 509.
Management of Diabetic Acidosis and Coma. L. W. Swanson.—p. 512.
Thrombosis of Cavernous Sinuses. De V. O. Bovenmyer.—p. 514.
Treatment of Cardiac Emergencies. H. W. Rathe.—p. 517.
Modern Aspects of Treatment of Tuberculosis. W. M. Spear.—p. 521.

Journal of the Mount Sinai Hospital, New York

13:167-214 (Nov.-Dec.) 1946

Topics in Study of Water Metabolism. E. P. Pick.—p. 167.
Suprasellar Chordoma. J. H. Globus and S. Berman.—p. 177.
Hypertension Due to Perirenal Constriction: Case Report. Naomi de Sola Pool.—p. 188.
Pericardiectomy for Constrictive Pericarditis: Case Report. W. Hitzig. —p. 193.
Left Subphrenic Abscess: Case Report. E. E. Arnheim.—p. 195.
Right Subphrenic Abscess with Perforation into Lower Lobe of Lung: Case Report. A. H. Aufses.—p. 200.
Perforation of Esophageal Foreign Body into Lung: Putrid Pulmonary Abscess: Case Report. H. Hennell.—p. 203.
Essays on Biology of Disease. E. Moschcowitz.—p. 205.

Military Surgeon, Washington, D. C.

99:361-740 (Nov.) 1946. **Partial Index**

Army Institute of Pathology During World War II. B. Lucké.—p. 364.
*Lower Nephron Nephrosis: (Renal Lesions of Crush Syndrome, of Burns, Transfusions and Other Conditions Affecting Lower Segments of Nephrons). B. Lucké.—p. 371.
Heat Stroke: Clinicopathologic Study of 125 Fatal Cases. N. Malamud, W. Haymaker and R. P. Custer.—p. 397.
*Fatal Pulmonary Embolism in 100 Battle Casualties. T. R. Hamilton and D. M. Angevine.—p. 450.
Intra-Ocular Tumors in Soldiers, World War II. H. C. Wilder.—p. 459.
Occurrence and Anatomic Characteristics of Fatal Tuberculosis in U. S. Army During World War II. J. D. Aronson.—p. 491.
Fibrous Dysplasia of Single Bones: (Monostotic Fibrous Dysplasia). H. G. Schlumberger.—p. 504.
*Bronchial Adenomas. S. W. Holley.—p. 528.
*Pathology of Acute Falciparum Malaria. Sophie Spitz.—p. 555.
Tumors of Testis: Report of 922 Cases. N. B. Friedman and R. A. Moore.—p. 573.
Primary Intracranial Neoplasms in Military Age Group—World War II. W. A. Bennett.—p. 594.
Coccidioidomycosis: Study of 95 Cases of Disseminated Type, with Special Reference to Pathogenesis of Disease. W. D. Forbus and A. M. Bestebreurtje.—p. 653.

Lower Nephron Nephrosis.—Lucké points out that a syndrome characterized by oliguria or anuria, heme pigment excretion, azotemia, hypertension and uremia may develop in conditions associated with destruction of tissue or intravascular hemolysis. This syndrome has been observed in crushing injury and other forms of trauma to muscle, nontraumatic muscular ischemia, uteroplacental damage (and eclampsia), burns, transfusion with incompatible blood, blackwater fever and other types of intravascular hemolysis, heat stroke, sulfonamide intoxication, alkalosis, mushroom poisoning and some other kinds of poisoning with vegetable and chemical agents. Death usually occurs within ten days. This syndrome has been the most frequent form of fatal kidney disorder encountered among military personnel during the war. The author reviews the records of 538 fatal cases received at the Army Institute of Pathology. The essential changes are selectively restricted to the lower segments of the nephrons and comprise focal degeneration or necrosis, presence of heme casts, secondary inflammatory reactions in the surrounding stroma and thrombosis of thin walled veins. The term lower nephron nephrosis is suggested as descriptive of the location and nature of the morphologic changes.

Fatal Pulmonary Embolisms in 100 Battle Casualties.—The 100 cases of fatal pulmonary embolism reviewed by Hamilton and Angevine occurred in battle casualties, that is, in young, previously healthy men and thus permitted observations without the usual variables and complicating factors of age and vascular disease. Venous stasis, caused most frequently by immobilization, appears to be the most important factor in the production of phlebothrombosis. Pulmonary infarcts were located predominantly on the right side and in the lower lobes. The prevalence of venous thrombosis on the left side of the body did not have a direct relationship to trauma, which occurred more frequently on the right side. The distribution of the venous thrombosis seems to be based on the anatomic relationships at the level of the common iliac vein.

Bronchial Adenomas.—The study reported by Holley is based on records and specimens of 39 cases of bronchial adenomas. In 38 cases the predominant symptoms and signs were cough, hemoptysis, recurrent acute respiratory infection and expectoration. Roentgenographic features were those of atelectasis, bronchiectasis, pulmonary inflammation, bronchial blockage and presence of a mass. These signs and symptoms were not all present in the same patient. The tumor was found incidentally at necropsy in 1 additional case. The tumors were located at or near the pulmonary hilus, were usually polypoid, and in several cases attained rather large size. They assumed two distinct patterns, one which simulated that of appendical carcinoid and the other that of some of the mixed tumors of salivary glands and other structures of the mouth and face. They have been designated carcinoid type and mixed tumor type of bronchial adenoma respectively. This study indicates that lobectomy or pneumonectomy, according to the location of the tumor, is the preferred treatment.

Pathology of Acute Falciparum Malaria.—Pathologic lesions observed in 50 cases of fatal falciparum malaria are discussed and correlated with available clinical information. Selective localization of parasitized erythrocytes does not occur outside the bone marrow, liver and spleen; the presence of "plugged" parasitized vessels in an organ cannot be correlated with clinical symptoms. Cerebral symptoms are considered to be related to anoxia. Thrombosis of the cerebral vessels is frequent, causing hemorrhages and the so-called granulomas. Renal lesions, both diffuse glomerulonephritis and hemoglobinuric nephrosis, occur with relative frequency and are, together with the myocardial infiltrate and adrenal "atrophy," evidence in favor of circulating toxins or allergens, probably released by Plasmodium falciparum.

Public Health Reports, Washington, D. C.

61:1677-1712 (Nov. 22) 1946

Rickettsialpox—Newly Recognized Rickettsial Disease: IV. Isolation of Rickettsia Apparently Identical with Causative Agent of Rickettsialpox from Allodermanyssus Sanguineus, Rodent Mite. R. J. Huebner, W. L. Jellison and C. Pomerantz.—p. 1677.

Purification and Concentration of Influenza Virus by Means of Alcohol Precipitation. H. R. Cox, J. van der Scheer, S. Aiston and E. Bohnel. —p. 1682.

*Effect of Topically Applied Sodium Fluoride on Dental Caries Experience: III. Report of Findings for Third Study Year. J. W. Knutson and W. D. Armstrong.—p. 1683.

Trends in Dentist-Population Ratios. J. W. Mountin, E. H. Pennell and G. S. Brockett.—p. 1689.

Topical Sodium Fluoride in Dental Caries.—Knutson and Armstrong present data on the incidence of dental caries in the permanent teeth of fluoride-treated children for a three year period and for the third year of a longitudinal study. The investigations were made in urban communities in Minnesota. When the study was begun, the children ranged in age from 7 to 15 years. The treated group consisted originally of 337 children, and the control group included 392 children. The former group received applications of sodium fluoride to the teeth in the upper and lower left quadrants, the teeth in the upper and lower right quadrants serving as controls. The control group of children did not receive fluoride treatments. During the three year period that ended in May 1945 the number of permanent teeth initially attacked by caries was 36.6 per cent less in fluoride treated than in untreated teeth. This percentage difference is somewhat smaller than that observed for the first year (39.8) and for the two year period (41.4). During the third study year, which ended in May 1945, the initial caries attack was 22.2 per cent less in fluoride treated than in untreated permanent teeth. This yearly difference is substantially less than that observed for the second year, 46.6, and for the first study year, 39.8. Among permanent teeth which were carious at the beginning of the study in 1942 the number of additional surfaces which became carious during the three year period that ended in May 1945 was 23.9 per cent less in treated than in untreated carious teeth. The percentage difference observed for the first study year was 12.4 and for the first two year period was 23.1. By individual study years there were 12.4, 25.2 and 33.1 per cent less newly carious surfaces in fluoride treated than in untreated carious teeth for the first, second and third years respectively.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

27:267-348 (Oct.) 1946

Antigenic Function of Simple Chemical Compounds: Production of Precipitins in Rabbits. P. G. H. Gell, C. R. Harington and R. P. Rivers.—p. 267.

Nonagglutinating Antibody in Human Antisera to Sh. Shiga and S. Typhi. W. T. J. Morgan and H. Schutze.—p. 286.

Studies on Experimental Goiter: VII. Thyroid Carcinomata in Rats Treated with Thiourea. H. D. Purves and W. E. Griesbach.—p. 294.

*Taste and Selection of Food in Hypoglycemia. W. Mayer-Gross and J. W. Walker.—p. 297.

Effects of Lewisite and Lewisite Oxide on Living Cells in Vitro. H. B. Fell and C. B. Allsopp.—p. 305.

Therapeutic Effect of British Antilewisite (Bal) on Tissue Cultures Grown in Medium Containing Lewisite Oxide. H. B. Fell and C. B. Allsopp.—p. 310.

State of Vitamin A in Human Serum. H. Hoch and R. Hoch.—p. 316

Electron Microscopy of Viruses: I. State of Aggregation of Tobacco Mosaic Virus. E. M. Crook and F. M. L. Sheffield.—p. 328.

Chemical Changes in Muscle During and After Ischemia. M. G. MacFarlane and S. J. L. Spooner.—p. 339.

Taste and Food Selection in Hypoglycemia.—This report by Mayer-Gross and Walker is based on 202 experiments carried out in 100 subjects with the object of testing self regulation in different stages of hypoglycemia. The subject was offered a choice of five liquids: water, 5 per cent sucrose, 30 per cent sucrose, 0.5 per cent sodium chloride and saccharin; his preference, judgment of taste and other reactions were noted and his blood sugar determined. The most important result was the preference for 30 per cent sucrose solution below the blood sugar level of 50 mg. per hundred cubic centimeters and the rejection of it above this critical level. Other findings, such as the judgment of sweetness for 5 per cent sucrose and saccharin, were also found related to the blood sugar level. The results are discussed in the light of the principle of self regulation.

British Journal of Ophthalmology, London

30:709-772 (Dec.) 1946

Microphthalmos. G. Forbes.—p. 709.

Adhesive Episcleral Reaction in Operative Treatment of Retinal Detachment. L. Weekers.—p. 715.

Sulfapyridine Resistant Koch-Weeks Conjunctivitis. H. J. Stern.—p. 722.

Posterior Uveitis in Case of Sarcoidosis. F. R. Neubert.—p. 724.

Posterior Ring Abscess of Metastatic Origin in Bechet's Disease. A. Feigenbaum and W. Kornblueth.—p. 729.

Myopia and Pseudomyopia. J. P. Spencer Walker.—p. 735.

Problems of Glaucoma. J. Vanysek.—p. 742.

Investigation of "Normal" on Synoptophore. M. M. Lewis.—p. 749.

Unusual Case of Intraocular Hemorrhage. D. W. McLean.—p. 758.

Clinical Science, London

6:1-124 (Oct.) 1946

*Anergy in Infants' Skin to Diphtheria Toxin. G. P. Wright and W. M. Clark.—p. 13.

Anatomic Changes in Liver After Trauma. E. G. L. Bywaters.—p. 19.

Effects of Venesection in Low Output Heart Failure. Sheila Howarth, J. McMichael and E. P. Sharpey-Schafer.—p. 41.

*Observations on Headache Accompanying Fever. R. B. Scott and R. P. Warin.—p. 51.

Observations on Mechanism of Pain in Ulcer of Stomach and Duodenum. G. L. W. Bonney and G. W. Pickering.—p. 63.

Use of Portal Anastomotic Vein for Absorption Studies in Man. Sheila Sherlock and V. Walshe.—p. 113.

Anergy in Infants' Skin to Diphtheria.—Wright and Clark point out that the reactions of mothers and their newborn infants to the Schick test often differ and that the disagreement is due almost entirely to the failure of the diphtheria toxin to excite a positive response in many infants of Schick positive mothers. This lessened skin reactivity, which in its extreme form has been termed "anergy," was present in more than one third of the infants of Schick positive mothers examined in five surveys, which are listed by the authors. They record the results of some experiments that they have made to find out in what ways the reactions caused by various irritants and by histamine in the skins of newborn infants differ from those in adults. They conclude that the low reactivity of newborn infants' skins to diphtheria toxin is not due to insensitivity to histamine or to inability to exhibit the typical triple response on injury. Since similar anergy is found in other forms of delayed response at this age, such as that produced by ultraviolet light, the mechanism underlying these responses may differ from that concerned with immediate reactions and may not become fully functional until some weeks after birth. It seems likely, however, that the lesser skin reactivity seen in delayed reactions in infants is partly due to the relatively rich and superficial vasculature of their skins, which would facilitate the escape both of injected substances and of vasodilator products of injured tissues.

Febrile Headache.—Scott and Warin studied the clinical characteristics and mechanism of headache accompanying acute febrile illness in 100 patients admitted to a military hospital in the Middle East. Evidence is presented indicating that in febrile headache pain arose from distention of the walls or perivascular tissues of dilated cranial arteries. Eye ache which accompanied headache in 93 patients was probably due to an orbital vascular disturbance.

Lancet, London

2:779-814 (Nov. 30) 1946

Cardiac Signs in Young Adults, with Special Reference to Functional Murmurs. G. Bourne.—p. 779.
Absorption and Excretion of Water: Antidiuretic Hormone. E. B. Verney.—p. 781.
*Oral Penicillin in Gonorrhea. S. R. M. Bushby and A. H. Harkness. —p. 783.
*Hemopoietic Response to Folic Acid in Pernicious Anemia: Sternal Marrow Changes. R. J. Harrison and J. C. White.—p. 787.
Examination of Home Contacts of Tuberculous Persons. W. P. Dick and B. C. Thompson.—p. 791.
*Hypertension and Calcium Intake. C. M. Kesson and A. McCutcheon. —p. 793.

Oral Penicillin in Gonorrhea.—Bushby and Harkness say that of 62 patients treated for fifteen hours with six doses each of penicillin 40,000 units and sodium citrate 1 Gm. given by mouth, a total of 240,000 units, 2 relapses occurred. This rate compares favorably with their experience in parenteral therapy. It is important to keep strictly to the regular dosage schedule and the restriction of fluids to 1½ pints (0.75 liter) during the course of treatment.

Folic Acid for Pernicious Anemia.—Harrison and White describe the result of folic acid therapy of a man aged 63 with pernicious anemia. Folic acid was given by mouth. On each of the first two days 20 mg. was given, followed by 10 mg. daily for six days. On the day after the start of therapy the patient's general condition deteriorated. A slow drip transfusion of 250 cc. of packed red cells was given carefully for six hours, followed by distinct improvement. A further 250 cc. of packed red cells was given next day. The general condition was now much improved. Therapy led to a return to normal hemopoiesis, as shown by the changes in sternal marrow and peripheral blood. Repeated doses of folic acid were necessary to maintain normal hemopoiesis.

Hypertension and Calcium Intake.—Kesson and McCutcheon did not find evidence that a high retention of lime prolonged over many months has any effect on the development of hypertension or on the calcification of the vessel walls.

Revue d'Hematologie, Paris

1:95-238 (No. 2) 1946

New Facts Concerning Isoimmunization in Hemolytic Disease of Newborn. A. E. Mourant.—p. 95.
Genetic Study of Blood Groups. R. R. Race.—p. 106.
Preservation of Blood by Acidification. R. Wurmser.—p. 112.
*Methionine in Treatment of Anemias. A. Gajdos.—p. 117.
Research on Coagulation of Blood. A. Tzanck and M. Burstein.—p. 142.
Study of Antibodies by Separation of Plasma Proteins into Fractions. G. Sandor.—p. 153.
Statistic Studies (Clinical and Serologic) on 50 Families with Hemolytic Disease of Newborn. M. Bessis.—p. 167.

Methionine in Treatment of Anemias.—Gajdos produced severe carbon tetrachloride poisoning in rats. Parenteral or oral administration of methionine prevented the occurrence of severe anemia in these animals. These results were confirmed in a second series of animal experiments in which anemia was produced in rats by a diet deficient in methionine, while anemia did not occur in rats on the same diet to which methionine was added. Ten patients between the ages of 48 and 70, with anemia of various types, were given 1 to 2 Gm. of methionine divided into four to eight cachets daily for two to four weeks. There was no untoward reaction and a pronounced improvement in the erythropoiesis of 7 patients, 3 with normocytic or hypochromic anemia secondary to hepatic cirrhosis, late untreated syphilis and duodenal hemorrhage, respectively, 1 with severe nutritional anemia, 1 with macrocytic anemia and 2 with normocytic anemia of unknown origin. Methionine was ineffective in 2 patients with pernicious anemia and in 1 with anemia secondary to diaphragmatic hernia. The slow and continuous increase in the number of red blood corpuscles with an average increase of 1,100,000 in two weeks may be explained partly by the amino acid character of the methionine and by its favorable effect on hepatic function.

Acta Radiologica, Stockholm

27:473-568 (Aug. 31) 1946. Partial Index

Relation of Microscopic Structure of Laryngeal Cancer to Radium Curability. S. Mustakallio.—p. 473.
Roentgen Examinations in Head Trauma. A. Engeset.—p. 481.
New Simplified Radium Applicator for Intensifying Radiotherapy of Parametria in Cancer of Cervix. V. Kahanpää.—p. 495.
Hernia Diaphragmatica Dextra: Report of 2 Cases. E. Poppe.—p. 505.
Mediastinal Phlebography. K. Lindblom.—p. 521.
Roentgen Diagnostics of Adrenal Tumors. G. Jansson.—p. 526.
*Fracture of Femoral Neck Following Roentgen Irradiation for Cancer of Uterus. K. Kulseng-Hanssen.—p. 531.

Fracture of Femoral Neck Following Roentgen Irradiation of Uterine Cancer.—Kulseng-Hanssen gives a brief survey of the damage to the bony structures caused by irradiation, giving particular attention to spontaneous fracture of the femoral neck. In 1 patient the fracture was bilateral and in 3 others unilateral. All 4 patients had received irradiation to the anterior and posterior fields and not to the lateral fields. The dose of radiation had been four times 2,300 units and four times 3,000 units. The fractures occurred from six to eighteen months after treatment. Two of the patients complained of pain some months before the occurrence of the fracture. The pain was moderate; all patients remained up and about. Osseous healing occurred in four fractures after a long time. One patient died of cancer.

Nordisk Medicin, Gothenburg

31:1555-1602 (July 19) 1946. Partial Index

Precancerous Conditions from General Pathologic Point of View. C. G. Ahlström.—p. 1555.
Dietetic Treatment in Cases of Stone in Urinary Tract. G. Hammarsten. —p. 1567.

Hospitalstidende

Hypophysial Myxedema. A. L. Pedersen.—p. 1571.
Redislocation of Fracture of Radius. G. Everberg.—p. 1574.

Hygiea

*Methylthiouracil Treatment of Hyperthyroidism. A. Rune Frisk.—p. 1575.

Methylthiouracil Treatment of Hyperthyroidism.—Frisk reports that the thyrotoxic symptoms disappeared in 101 of 104 cases of hyperthyroidism treated with methylthiouracil or allied substances. Of the 101 patients 8 were operated on. Of the 24 who completed treatment 17 have been without symptoms for over six months. No certain relation between the severity of the hyperthyroidism and the rapidity of improvement was demonstrable. The advisability of the treatment during pregnancy is questioned. The danger of agranulocytosis during long continued treatment is slight, but regular close control of the patient for a long time is called for. To what extent methylthiouracil treatment can cure hyperthyroidism is not yet known. In its present form the treatment complements surgical treatment. Certain types of hyperthyroidism should be treated operatively. Patients with hyperthyroidism with considerable enlargement of the thyroid, of toxic adenoma and intrathoracic goiter react slowly to methylthiouracil, and there is danger of considerable enlargement of the thyroid gland. The time factor requires operative treatment of other moderately grave to grave cases of thyrotoxicosis with palpably enlarged thyroid gland. In mild cases without enlargement of the thyroid as well as in recurrence after operation and in cases with cardiac or other complications thiouracil treatment alone should be applied.

Book Notices

Peripheral Vascular Diseases. By Edgar V. Allen, B.S., M.A., M.D., Associate Professor of Medicine, Mayo Foundation, Graduate School, University of Minnesota, Minneapolis, Nelson W. Barker, B.A., M.D., M.S. in Medicine, Associate Professor of Medicine, Mayo Foundation, Graduate School, University of Minnesota, and Edgar A. Hines Jr., M.D., B.S., M.A., Associate Professor of Medicine, Mayo Foundation, Graduate School, University of Minnesota. With Associates in the Mayo Clinic and Mayo Foundation. Cloth. Price, $10. Pp. 871, with 386 illustrations. W. B. Saunders Company, West Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W. C. 2, 1946.

Peripheral vascular disease to many physicians is a mysterious catchall into which diagnostic problems are discarded in haphazard fashion. To bring order from this chaos is a noteworthy purpose and a goal toward which these authors have made a splendid effort. This scholarly, well documented and scientific presentation of a difficult subject deserves an enthusiastic welcome.

The book begins with a review of gross and fine anatomy of the vascular system, after a preliminary glossary of common clinical terms. In a chapter on methods of investigation, accepted technics are thoroughly reviewed as to value, utility and accuracy. The writers frankly state whether any method is preferred and what their experience, if any, has been with it. In the assay and management of peripheral vascular diseases certain procedures are of theoretical value, and the practical applications and reliability factors are analyzed in the light of the experience at the Mayo Clinic. The various diseases of the vascular periphery are dealt with in subsequent portions, including Raynaud's disease, erythromelalgia, sudden occlusions, arteriosclerosis, Buerger's disease, periarteritis, scleroderma, aneurysms, thrombophlebitis and varicose veins. Preceding many of the special sections is a brief illustrated historical sketch of a pioneer contributor to the subject, which is a highly interesting and commendable feature. The material is well organized according to a pattern outlined in each chapter subheading. Illustrations are well chosen and frequent enough to enhance the value of the text. Bibliographic references follow each topic and are of both current and historical significance. Primarily the entire book is written from a medical point of view, but there are brief contributions by several surgeons of the clinic which allow adequate survey of their field.

The chapter on arteriosclerosis is especially noteworthy and almost a must for every physician. The analysis of the types of pain encountered in arteriosclerosis obliterans, succinctly stated, is masterful. The use of the term "secondary Raynaud's phenomena" is perhaps unfortunate because it is likely to be confusing. The experience of military surgeons on the secondary effects of trauma on the peripheral vascular system will require more thorough analysis. The increasing use of paravertebral sympathectomy and sympathetic block in the management of painful wounds, Sudeck's syndrome and allied conditions was one of the great lessons of war surgery. Future editions will probably contain more thoroughly digested data concerning the reflex effect of trauma on the peripheral vascular system via the autonomic nervous system.

This book can be recommended to all who are interested in the subject, and this applies to every physician and surgeon.

Mongolism and Cretinism: A Study of the Clinical Manifestations and the General Pathology of Pituitary and Thyroid Deficiency. By Clemens E. Benda, M.D., Director, Wallace Research Laboratory for the Study of Mental Deficiency, Wrentham, Massachusetts. Fabrikoid. Price, $6.50. Pp. 310, with 103 illustrations. Grune & Stratton, Inc., 443 4th Ave., New York 16, 1946.

This monograph by Dr. Benda, as indicated by its title, implies that mongolism and cretinism are endocrine diseases of a similar nature but due to abnormalities of different glands. However, the contributions made by the author and the amount of space assigned in the text definitely show his interest to be primarily devoted to the problems of mongolism. In his preface he states that "the purpose of the book is to rid mongolism of the mystery clouding its proper medical recognition and to publish data . . . devoted to the study of mental deficiency, during ten years of continuous research." He has studied more than 300 mongoloid patients, many of them over a ten year period, performed fifty necropsies and made intensive studies of measurements, roentgenograms and biochemical and psychologic data. In addition, he has provided much new material on family history and hereditary backgrounds and on the relationship of mongolism to the pregnancy of the mother and the order of birth in the family. On these grounds alone the book has made a decided contribution to medical knowledge about this tragic condition and the author has fulfilled his stated objective.

The controversial theme is struck by his decided conviction that mongolism is due to a type of anterior pituitary deficiency which is as sharply defined as is thyroid deficiency in cretinism. The acceptance of this thesis by the individual reader will probably depend on his readiness to accept the evidence as valid and on his ability to fit the hypothesis with his own experience in handling mongoloid patients. The evidence as presented leaves many gaps of information which would have to be filled in before the pathogenesis of mongolism could be explained on an endocrine basis alone.

From the point of view of therapy one important element was omitted or too lightly touched on. That is the fact that such patients can be adequately treated only in an institution. Attempts at psychologic or endocrine treatment in the home are well-nigh impossible and, as a matter of fact, the presence of a mongoloid child in a family almost always disrupts the group either through divorce of the parents or through gross neglect of other siblings. It is to be feared that efforts to cure this as yet incurable condition by endocrine means will increase the number of such patients kept in their homes, with the obvious expectancy of more and more family maladjustments and disappointments. Furthermore, by his suggestion that obstetricians might be able to prevent the birth of mongoloids by observing the history of pregnancy, abortion and maternal endocrine situations, Dr. Benda has saddled obstetricians with a responsibility which rests on a very tenuous basis. It will probably take much more information than is now available before treatment during pregnancy can be put on a sound scientific basis. Most important of all, it is felt that information to the public on this subject may lead to a great deal of fear and confusion of mind. We have not yet reached a point in our understanding at which we can settle the fears of laymen or answer their questions. Nevertheless this book is a distinct and valuable addition to our medical knowledge and does contribute to our understanding of one of the most perplexing problems of the day. That Dr. Benda does not answer all our questions is true, but to have added to our factual material and to have turned our sights to a new approach to the subject is perhaps enough for one book.

Carbohydrate Metabolism: Correlation of Physiological, Biochemical and Clinical Aspects. By Samuel Soskin, M.D., Director of the Research Institute, Michael Reese Hospital, Chicago, and Rachmiel Levine, M.D., Director of Metabolic and Endocrine Research, Michael Reese Hospital. Cloth. Price, $6. Pp. 315, with 75 illustrations. University of Chicago Press, 58th St. and Ellis Ave., Chicago 37, 1946.

In the latter part of this book the authors emphasize the fact that newer research enforces the view that beyond a certain point the fats, carbohydrates and proteins have a common pathway of metabolism. One is not justified, therefore, in discussing the chemical transformations of one of the major foodstuffs in the body to the exclusion of the others. This broad attitude sets the pattern for the entire book. The authors, who have carried out extensive investigation in the field of carbohydrate metabolism, point out that the evidence on which the current concepts are based has been assembled through a variety of experimental devices—studies on intact animals, tissue slices, tissue press juice and micro-organisms—and that as a result one cannot view the story of carbohydrate metabolism as complete or even satisfactory in all the details at the present time.

The first section in the monograph deals with the chemical changes which carbohydrate undergoes under enzymatic influence in the body, the role of phosphate and the resultant energy transformations. There follows a searching critique of the factors bearing on the classic concept of diabetes; the positive role of the liver in carbohydrate metabolism is reaffirmed. The part played by the various hormones is clearly outlined, and the integration of these factors in metabolism is presented. Of the function of insulin it is stated that it "enables the liver to do at low or normal blood sugar levels that for which very high blood sugar levels are required in the absence of insulin." The application of basic principles to clinical use and variations of carbohydrate metabolism in different species are touched on. The discussion throughout is clear and cogent, with helpful diagrams and tables. At the end of each chapter there is an extensive list of references to the literature discussed in the text. A tendency to oversimplification is justified by the effort to establish a clearcut picture as a basis for further development. The clinician will find no rule of thumb aids on treating his diabetic patients in this book; instead he will discover, outlined with textbook clarity, the principles on which effective treatment is based.

The Surgical Technic of Abdominal Operations. By Julius L. Spivack, M.D., LL.D., Associate Professor of Surgery, University of Illinois College of Medicine, Chicago. Fourth edition. Fabrikoid. Price, $10. Pp. 710, with 682 illustrations. Charles C Thomas, 301-327 E. Lawrence Ave., Springfield, Ill., 1946.

This is a well known work on surgical technic, and its favorable reception by physicians is evidenced by the appearance of the fourth edition. It is difficult to estimate its worth and place it properly in the surgeon's library. The emphasis on historical aspects requires special mention because the average surgeon frequently does not know who originated what operation. On the other hand, the careful historical development of a procedure which has long been discarded is going to prove of doubtful benefit to the reader. This manner of presentation can be overdone, and the detailed eponymic description of the thirty-two methods of gastrostomy listed could better be abbreviated. There are described eight methods of performing hepatopexy, now rarely done. The mere statement that some one described such a method in such a year is not enlightening. Thus the background of Billroth's original gastric operations and the amount of experimental work and thought preceding them are far more interesting than the actual fact that he and his associates deserve priority. In introducing an operation for ventral hernia, the author says:

> The priority of introducing this method belongs to Sapjieko, who performed it for the first time in 1898 and published it in February 1900. Independently of Sapjieko, it was described by Piccoli in January 1900. Thus the priority in reporting belongs to Piccoli and of performing to Sapjieko. In the United States it is known as the Blake method.

All of which doesn't really contribute to the advancement of surgical knowledge.

Operations on the stomach are allotted a prominent portion of the text, whereas operations of the left colon, sigmoid and rectum are less fully enlarged on. It may be remarked that there are many valuable technics (and interesting eponyms) deserving of mention which are associated with these anatomic areas. The chapters devoted entirely to technic are very good and will benefit any surgeon. The extensive bibliography of original articles is quite useful. The illustrations are superior in quality and will educate every physician.

A Primer for Diabetic Patients: An Outline of Treatment for Diabetes with Diet, Insulin and Protamine-Zinc Insulin, Including Directions and Charts for the Use of Physicians in Planning Diet Prescriptions. By Russell M. Wilder, M.D., Ph.D., F.A.C.P., Professor and Chief of the Department of Medicine of the Mayo Foundation, University of Minnesota, Rochester, Minnesota. Eighth edition. Cloth. Price, $1.75. Pp. 192, with 8 illustrations. W. B. Saunders Company, West Washington Square, Philadelphia 5; 7 Grape St., Shaftesbury Ave., London W. C. 2, 1946.

This sensible primer, with comparatively few changes, is now in its eighth edition. If diabetic patients would only learn the answers to the admirable questions at the end of each chapter, their lives would be greatly prolonged.

In these days of intravenous medication it is a bit surprising that so much emphasis is put on the administration of dextrose by rectum instead of by vein when food is not retained (page 47). The subheading of the tables for the average height, weight and age for men and women is incorrect, because the tables were designed for men and women as ordinarily dressed (pages 158-159). "We usually advise against increasing the dose of protamine-zinc insulin to an amount larger than 20 units" (page 29). Certainly many patients can take more with impunity. The directions for giving mixtures of protamine zinc insulin and soluble insulin are excellent, but they occupy nearly four pages of the book, thus demonstrating the complications of administration (pages 30-34). Globin insulin, sulfadiazine and penicillin are not mentioned, and the advantages of price and ease of purchase of isopropyl alcohol are not sufficiently stressed.

Proceedings Conference on the Rehabilitation of the Tuberculous. *Sponsored by the Office of Vocational Rehabilitation, Federal Security Agency,* with The Tuberculosis Control Division, U. S. Public Health Service, Federal Security Agency, and The National Tuberculosis Association, March 4-6, 1946, Washington, D. C. Edited by Holland Hudson, Director, Rehabilitation Service, National Tuberculosis Association, and Norvin C. Kiefer, M.D., Surgeon, Office of the Chief, Tuberculosis Control Division, U. S. Public Health Service. Paper. Pp. 138. National Tuberculosis Association, 1790 Broadway, New York 19, 1946.

In March 1946 two federal agencies and one national voluntary health agency held a conference in Washington to discuss the various skills which will contribute substantially to the rehabilitation of tuberculous patients. In the planning for this three day meeting the Office of Vocational Rehabilitation was sponsor, and the co-sponsors were the Tuberculosis Control Division of the U. S. Public Health Service and the National Tuberculosis Association. Physicians, nurses, occupational therapists, social workers and counselors were invited to define and clarify the functions of each of these assignments as they relate to the rehabilitation of the patient.

The topics covered by the proceedings of the conference are the purposes of the conference; editors' foreword; participating members; guests; functions of the nurse, of the social worker, of the educational counselor and of the occupational therapist in the rehabilitation of the tuberculous; function of the rehabilitation counselor in the federal-state program for the vocational rehabilitation of the tuberculous; terminology of rehabilitation of the tuberculous, and recommendations for plans to solve some of the unsolved problems of rehabilitation of the tuberculous.

The editors have steered a midway course between formal summarization and full transcript. The flavor and color of discussion have been retained along with the essence of the study. It is apparent from the text that the invitations to participate were addressed to articulate and inquiring minds. Many of the participants exhibit a warm enthusiasm for the special skills of their personal experience, an understanding of the objectives of other types of work and a wish to coordinate total effort for the benefit of the tuberculous patient and his family. Throughout the discussion, comments and suggestions were made in terms of the local area and the individual hospital as well as for the nation as a whole.

De osteopetrosis en de normale osteoen hæmatopoïese: Osteopetrosis, ziekte van Albers Schönberg, marmerbeenziekte, osteosclerosis fragilis generalisata, congenitale osteosclerose. Door Dr. K. Dierickx. [Osteopetrosis and Normal Osteo- and Hemato poiesis: Osteopetrosis, Albers-Schönberg Disease, Marble Bones Disease, Osteosclerosis Fragilis Generalisata, Congenital Osteosclerosis.] Universiteit Gent, proefschrift ter verkrijging van den Graad van Geaggregeerde van het Hooger Onderwijs in de Pathologische Ontleedkunde. Paper. Pp. 148, with 59 illustrations. Uitgeversbedrijf Fiat, Ghent, Belgium, 1944.

This monograph records clinical studies and the roentgenographic, histologic and chemical study of the bones of 2 patients dying with osteopetrosis. A previously nonrecorded feature was the discovery of conical structures in practically all the bones. A technic is described to demonstrate these cones by roentgen ray examination. The conical structures are considered to be the result of the absence of or partial lack of resorption of the cartilage and endochondrial or membrane bone. The retardation of bone resorption is accompanied by generalized fibrosis of the marrow with hypoplasia of the blood vessels and resultant aplasia of the marrow and extramedullary hematopoiesis. The disease is characterized as a recessive hereditary morbid condition, the onset coinciding with the first appearance of ossification, about the second fetal mouth. The bibliography includes one hundred and sixty items.

Handbook of Neurological Examination and Case Recording. By D. Denny-Brown, M.D., J. Jackson Putnam Professor of Neurology, Harvard Medical School, Boston. Paper. Price, $1.75. Pp. 107. Harvard University Press, Cambridge 38; Oxford University Press, Amen House, Warwick Sq., London, E. C. 4, 1946.

This book, bound loosely by wire rings, is a printed form of material originally written for House Officers of the Neurological Unit of the Boston City Hospital. It resembles many similar manuals used in hospitals. These outlines can hardly replace chapters in standard textbooks available to all students, residents and physicians, for they are sketchy and lack the usual tables and illustrations.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

RH FACTOR

To the Editor:—A woman aged 26 has had four pregnancies. The first child, born eight years ago, lived to the age of 4 and died of burns. The second one, eighteen months later, lived to the age of 8 months and died of causes unknown to me. The third and fourth children died in their first week of life from erythroblastosis fetalis, diagnoses established by competent specialists. The woman is Rh positive. She is anxious to have more children if she can be assured that they will not die from erythroblastosis fetalis. Can she have normal babies in the future?
M.D., California.

Answer.—The Rh factor is not a single homogeneous substance. It consists of several qualitatively differing Rh types. The term Rh positive is a collective general designation.

An Rh-positive woman of one type may become sensitized by the Rh factor of her baby of a different type, and sensitization may be the cause of fetal erythroblastosis.

The following questions have to be answered in the case described in the query:

1. Was the erythroblastosis due to Rh incompatibility? This may be answered by testing the Rh type of the husband and wife. If they differ, tests for Rh antibody in the blood of the mother may prove sensitization. Examination should include tests for anti-Rh saline agglutinins, serum-albumin agglutinins, blocking antibody, the Diamond-Abelson slide test and the Coombs test (Hill's developing test). If one or more of these tests are positive, Rh sensitization is established. The degree of sensitization may be demonstrated by titration of the antibody.

In an occasional case sensitization and erythroblastosis may be due to the Hr factor, which is shown by the presence in the mother's serum of agglutinins clumping all Rh-negative red cells and some Rh-positive (heterozygous) cells.

2. If the father is Rh positive, is he heterozygous or homozygous Rh-positive? This is an important question because, if he is heterozygous, some of his children may be Rh negative and not subject to erythroblastosis caused by Rh incompatibility.

There are two ways to answer the problem:

(*a*) Testing of the father's blood with an anti-Hr serum. Clumping suggests that the father's blood is heterozygous. Negative results suggest homozygosity.

(*b*) Rh testing of the parents of the husband and of living children, if any. If any of them is Rh negative, heterozygosity of the husband is shown.

All children of a homozygous parent must be Rh positive and therefore more likely affected by the disease.

If the Rh factor is excluded as the cause, there is still the possibility that factors A or B may be responsible if present in the fetus and absent in the mother.

These studies may throw light on the cause of the disease and permit a cautious prognosis, but the mother cannot be assured that her child will not have erythroblastosis and still less that it will not die from the disease.

Transfusions with Rh-negative blood have reduced the mortality from erythroblastosis fetalis considerably.

Artificial insemination from a properly selected donor is the only sure way of having a normal baby by a woman who has had babies with erythroblastosis due to blood group or Rh incompatibility.

PILOCARPINE AND SEBORRHEA

To the Editor:—Pilocarpine has been advised in a number of prescriptions for the treatment of seborrhea. What is the effect of pilocarpine on the sebaceous glands? While pilocarpine increases sweating in general, is its effect locally and systemically to inhibit the activity of the sebaceous glands in general?
Harold Simons, M.D., Bremerton, Wash.

Answer.—Sollmann (A Manual of Pharmacology, ed. 4, Philadelphia, W. B. Saunders Company, 1932) does not list the sebaceous glands as influenced by pilocarpine. This drug was much used years ago in formulas employed for seborrhea or dandruff. Modern remedies rarely include it. It probably does not have any effective action in diseases of the scalp.

SUDEK'S BONE ATROPHY

To the Editor:—A woman aged 54 "turned" on her left ankle in October 1943. The pain disappeared after eight months' rest. X-ray studies disclosed osseous rarefaction in the region of the left ankle. In January 1944 the left knee became swollen and painful. An orthopedist advised the patient to "use it," as atrophy from disuse was present. This only aggravated the symptoms. The patient then resorted to resting the knee, which caused great improvement. Physical therapy, various medicines and procaine injection have been tried, but the patient still has slight pain in the knee, which is greatly increased by even slight movement. Is excision of the patella indicated for this condition of painful knee?
M.D., Illinois.

Answer.—It is probable that the patient described in the query has an unusual and unaccountable type of bone atrophy sometimes called Sudek's bone atrophy. Excision of the patella should be limited to certain types of fractures and to those rather rare cases of osteoarthritis of the knee in which the patella seems to be the chief offender. Although people can get along well without the patella, it should not be removed indiscriminately. Sudek's bone atrophy has a slow course, which is often several years. Time worn remedies such as heat, massage and use to the point of toleration do help. The diet should be scrutinized to see that the patient is getting the proper food. Sometimes in elderly patients, particularly women who are living alone, the diet may be improperly balanced.

ETHYLENE DICHLORIDE

To the Editor:—What are the toxic effects of ethylene dichloride used commercially as a finisher on celluloid products? Would any by-products be produced by the action of ethylene dichloride on the acetate? A patient who works with these chemicals complains of nausea and weakness for several hours after contact with the fumes. His liver is palpable about 2 inches below the costal margin. Tests of hepatic function have not been performed.
Isadore M. Siegel, M.D., Far Rockaway, N. Y.

Answer.—Ethylene dichloride alone is capable of causing the manifestations described in the query. Ethylene dichloride (dichloroethane) is one of the highly toxic members of the chlorinated hydrocarbons. Nausea, vomiting, headache and drowsiness represent initial features of toxic action after sufficient exposure. Greater exposure in terms of time and concentration may lead to involvement of the liver, kidneys, lungs, adrenals and corneas. The upper limit of safety possibly lies between 100 and 200 parts per million. A recent publication by Heppel, Neal, Perrin, Endicott and Porterfield (*J. Indust. Hyg. & Toxicol.* **28**:113, 1946) deals with the effects of daily inhalations. This is the fifth in a series on 1,2-dichloroethane and includes an extensive bibliography.

KIRSCHNER ELECTROCOAGULATION OF GASSERIAN GANGLION

To the Editor:—In the following article reference is made to Kirschner's electrocoagulation method for treating gasserian ganglion. Of what does the method consist? Has it met with approval in the United States?

> "*ELECTROCOAGULATION OF GASSERIAN GANGLION*
>
> "*B. Oddsson*
>
> "In the neurosurgical department of Rigshospitalet in Copenhagen 86 patients with trigeminal neuralgia have been treated during the last six years with electrocoagulation of the gasserian ganglion by the Kirschner method. The operation takes a few minutes. The patients were between the ages of 19 and 92. There were 54 women and 32 men. The duration of the neuralgia was on an average six years, the longest thirty years and the shortest three months. Primary relief of symptoms was obtained in 66 cases, the remaining 20 having to undergo other treatment. The longest follow-up was fifty-one months, the shortest three months. The follow-up revealed that 25 patients were relieved of pain and 7 were substantially improved; 13 patients had a recurrence, which in most cases yielded to a repeated electrocoagulation. There were no fatal cases. Abst. from *Acta Psychiatrica et Neurologica*, Copenhagen 19:1-411 (Nos. 1-2) 1944."

C. B. Greear, M.D., Honaker, Va.

Answer.—Kirschner's method of treating trigeminal neuralgia by electrocoagulation of the gasserian ganglion has never found acceptance in this country. This method of electrocoagulation is a blind one and unsatisfactory for several reasons. It is impossible to determine with accuracy which divisions of the gasserian ganglion are being coagulated or even of being sure that the ganglion is being treated. Furthermore, it is impossible to limit the coagulation accurately to the structures desired. In contrast, retrogasserian neurotomy, which is commonly practiced by neurosurgeons of this country affords good relief with a mortality of less than 0.5 per cent. The results of electrocoagulation by the method quoted in the query are not as favorable as the results of surgery.

SCLERODERMA

To the Editor:—What is the latest treatment of scleroderma?

Lawrence L. Garner, M.D., Milwaukee.

Answer.—Living in an equable, warm climate is helpful in the treatment of scleroderma. Physical therapy is useful including massage, heat and contrasting baths and percutaneous electrical transmission of mecholyl. Large enough doses of vitamin D to achieve a negative calcium balance have been recommended by Cornbleet and the use of preparations of pancreas by Seller. Thyroid has been found helpful in some cases, as well as posterior pituitary injection. O'Leary and Waisman recommended neostigmine. Gold salts as well as bismuth preparations have been tried. A number of reports praising the effectiveness of bismuth for localized scleroderma have appeared. It is hoped that this agent will prove as useful in the generalized variety. Surgical intervention has been both lauded and condemned. Sympathectomy and parathyroidectomy have been followed by rapid improvement. It appears, however, that these favorable responses are but temporary.

PROLONGED INTERVAL BETWEEN PREGNANCIES

To the Editor:—Is there any factual basis to support the belief that a second pregnancy may be especially hazardous after an interval of fourteen years? The first pregnancy was normal but was complicated post partum by a breast abscess. The woman is now 36 years of age, in good health and without any pelvic abnormality.

M.D., New Jersey.

Answer.—The length of the interval between pregnancies does not have an appreciable effect on a subsequent pregnancy. The hazard of a second pregnancy fourteen years after the first one is not increased provided there has not been a change in the patient's physical condition. However, age is an important factor in childbearing. Older mothers are more likely to have hypertension, vascular-renal disease and other physical handicaps which may complicate pregnancy.

TREATMENT OF PULMONARY EMBOLISM

To the Editor:—A white woman aged 28 had a typical attack of pulmonary embolism on the tenth day following pelvic surgery. The pulmonary embolism was accompanied with signs of severe shock, including profuse perspiration, clammy skin, profound fall of blood pressure and a rapid, scarcely palpable, pulse. What is the treatment of shock in such a case? Is there any objection to stimplants such as epinephrine, caffeine or metrazol? Can stimulants dislodge the first embolus or cause additional embolic attacks?

M.D., California.

Answer.—Shock following pulmonary embolism is due to mechanical obstruction of the pulmonary circulation which in many fatal and unusually severe cases involves both the right and left pulmonary arteries by means of a "saddle embolus." Reflex nervous phenomena may contribute harmful effects, perhaps through distention of the artery by the embolus. It is interesting that shock and harmful reflexes do not occur when the pulmonary artery is surgically ligated in the course of pneumonectomy.

The most useful immediate treatment of pulmonary embolism consists in hypodermic injection of morphine and inhalation of a high concentration of oxygen by catheter, tent or mask. The stimulants ordinarily used in the treatment of so-called surgical shock are not likely to be of value in pulmonary embolism and may prove harmful when the right side of the heart is overloaded. Papaverine has been recommended for the reflex nervous phenomena that may be present. If the patient survives the immediate attack, heparin or Dicumarol (3-3'-methylene-bis-[hydroxycoumarin]) should be given intravenously to prevent propagation of thrombi, and the thrombosed vein that was the source of the embolus should be ligated on the cardiac side of the thrombus. An emergency operation to remove the pulmonary embolus after incision of the pulmonary artery in severe cases has been successful in a few instances.

ADMINISTRATION OF THYROID

To the Editor:—Is there any advantage in prescribing thyroid in divided daily doses rather than in a single daily amount?

M.D., New York.

Answer.—The action of desiccated thyroid is so prolonged that there is no advantage whatever in prescribing the daily dose in divided portions. It works just as well when the total amount for the day is given in one dose. In a patient with myxedema it takes three to ten days for the effect of a single dose of 10 mg. of thyroxine on the basal metabolism to become maximum and from seventy to ninety days for the effect on the basal metabolism to wear off.

FALSE POSITIVE SEROLOGIC REACTIONS FOR SYPHILIS IN CEREBROSPINAL FLUID

To the Editor:—Can malaria cause a false positive spinal fluid Kolmer reaction? A man had a 3 plus blood Kolmer reaction and a negative spinal fluid Kolmer reaction. Two weeks later the patient had a 4 plus blood Kolmer reaction and a negative spinal fluid Kolmer reaction. He was then given malaria for some reason or other and had eleven attacks of chills and fever. Three months after malaria therapy his blood Kolmer reaction was 2 plus and his spinal fluid Kolmer reaction was 1 plus. The Kahn test and the colloidal gold test on the spinal fluid were negative. Would you consider this patient to have incidentally developed central nervous system syphilis after malaria therapy, to have developed central nervous system syphilis because of malaria, or to have a false positive spinal fluid reaction due to malaria?

M.D., Washington.

Answer.—Biologic false positive tests for syphilis in the cerebrospinal fluid, as reported by Scott, Reynolds and Mohr, occur in association with meningeal inflammation (tuberculous meningitis, meningococcic meningitis and lymphocytic choriomeningitis). In these conditions there may be a transfer of reagin from the blood serum through abnormally permeable meninges, but falsely positive tests for syphilis also have been reported in the spinal fluids of patients whose blood serologic tests are negative.

This phenomenon is not known to occur in malaria. Several groups of investigators, including Potter, Bronstein and Gruber, and Robinson and McKinney, have performed routine spinal fluid tests for syphilis in cases of vivax malaria, but in no instance were they able to demonstrate either positive flocculation tests or positive complement fixation tests.

In the patient described in the query there was observed on one occasion only a doubtful spinal fluid Kolmer-Wassermann reaction. It is probable that this unconfirmed finding represents a technical laboratory error or possibly a mistake in secretarial transcription of the report. It may be completely disregarded unless (*a*) the patient has clinical evidence of neurosyphilis (what was the "some reason or other" for which induced malaria was given, since this therapeutic method is rarely employed unless for neurosyphilis?) or (*b*) it is proved that he actually has syphilis of any kind (for which the serologic results reported do not constitute justification). In either of these events, but not otherwise, the spinal fluid examination should be repeated in about six months by a reliable laboratory.

Complement fixation tests on spinal fluid are more satisfactory than any flocculation test. Neither, however, can be correctly interpreted on the basis of reports of "positive," "strongly positive," "1 plus," "3 plus" and so on. The amounts of spinal fluid employed in a quantitative test must be stated. Competent laboratories report positive results in terms of the smallest amount of fluid showing such a result, e. g. positive with 0.2 cc. and larger amounts, doubtful with 0.1 cc., negative with 0.05 cc.

References:

Scott, Virgil; Reynolds, F. W., and Mohr, C. F.: Biologic False Positive Spinal Fluid Wassermann Reactions Associated with Meningitis: Report of 8 Cases, *Am. J. Syph., Gonor. & Ven. Dis.* **28**: 431 (July) 1944.

Potter, H. W.; Bronstein, L. H., and Gruber, C. M.: Blood and Spinal Fluid Tests for Syphilis in Malarial Patients, The Journal, March 24, 1945, p. 699.

Robinson, H. M., Jr., and McKinney, W. W.: Vivax Malaria and Serologic Tests for Syphilis, The Journal, Nov. 3, 1945, p. 667.

TREATMENT OF FACIAL ANGIOMAS

To the Editor:—I am writing in regard to the two notes (July 6, 1946, p. 873 and Nov. 20, 1946, p. 822) on facial angiomas, the latter protesting against the advice given in the answer to a query. The case of infantile hemangioma with eyelid involvement and ptosis as described in the query must be considerably disfiguring at present and would be in the future, should spontaneous involution fail. For this reason expert attention is indicated. I agree in general with the therapy suggested, although nothing definite can be recommended without seeing the patient. The statement of the second note, that a case such as described "will" involute spontaneously, in my opinion would have sounded better if the word "may" instead of "will" had been used. Absolute statements can seldom be pronounced in medicine. It is common knowledge that the majority of hemangiomas involute spontaneously, which means that "not all" hemangiomas do so, otherwise none would be seen in adults. The number of hemangiomas seen in adults is far from small. In my recent tabulation (Hemangiomas: Should Treatment be Expectant or Active? *Rhode Island M. J.* **29**: 658 [Sept.] 1946) in a group of 347 hemangiomas 54 were in adults. In regard to treatment, it is too easy to dismiss every case of hemangioma with the statement that it will disappear in five years. Each individual case must be properly studied. If suitable for expectant therapy, the hemangioma can be left alone. But hemangiomas located, for instance, on the face, producing considerable disfigurement, in the eventuality that they will not involute spontaneously, at the same time being easily and quickly removed without sequelae, should be treated. Spontaneous involution takes five years. The mental anguish of the parents looking at a disfigured child for five years is to be given consideration. Moreover, supposing even 1 case in a thousand will be disfigurement for life because it was an "exception to the rule," wouldn't it be a heavy responsibility for the physician to have decided to wait?

Francesco Ronchese, M.D., Providence, R. I.

The Journal of the
American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 133, No. 9 CHICAGO, ILLINOIS MARCH 1, 1947

Copyright, 1947, by American Medical Association

STREPTOMYCIN FOR URINARY TRACT INFECTIONS

JOHN D ADCOCK, M D.
Ann Arbor, Mich.
and
ROBERT T. PLUMB, M D.
San Diego, Calif.

Streptomycin has been shown to be effective in vitro[1] against various gram-negative bacilli frequently responsible for urinary infections which prove refractory to sulfonamide compounds and penicillin. The purposes of the present communication are (1) to report the results of streptomycin therapy in 11 patients with infections of the urinary tract due to gram-negative bacilli which were sensitive to streptomycin in vitro; (2) to correlate results of therapy with the in vitro sensitivity of the infecting organisms and the concentrations of streptomycin attained in the patients' serum, and (3) to report the acquisition, in vivo, of definite resistance to streptomycin by some of the bacteria present in these patients.

SELECTION OF CASES

In the selection of cases for study, both acute and chronic infections were included. A deliberate attempt was made to select patients in whom a single organism appeared to be responsible for the infection, but in 3 instances the infection was polyvalent. Of the 8 patients with univalent infections an organism of the Aerobacter group was responsible in 5, Pseudomonas aeruginosa in 2 and Escherichia coli in 1 case. Ps. aeruginosa was present in each of the cases having polyvalent infections, in combination with Esch. coli in 1 case, Streptococcus fecalis and Proteus vulgaris in another and with Klebsiella granulomatis in 1 case. Each patient had received sulfonamide compounds or penicillin or both, prior to the use of streptomycin, without demonstrable effect on the objective manifestations of the infection.

MATERIALS AND METHODS OF STUDY

Streptomycin was administered by parenteral injection since it has been shown[2] that it is poorly absorbed when given orally. It was supplied as a dry powder of varying degrees of purity. For intramuscular use it was dissolved in distilled water in concentrations of 0.1 Gm.[3] (100,000 units) per cubic centimeter. For continuous intravenous or subcutaneous infusion 1 Gm. was dissolved in 1 liter of 5 per cent dextrose or isotonic solution of sodium chloride. Details of treatment are included in each case report.

Urine for culture was obtained by catheterization prior to starting streptomycin therapy in each case. Thereafter catheterization was avoided in men by collecting the second glass voided specimens after thorough cleansing of the glans and meatus. Each specimen was immediately centrifuged and the sediment promptly placed on culture mediums. Using this technic an occasional contaminant could easily be identified as such. In patients with indwelling catheters and in the 1 woman in the series all specimens were obtained by catheter. All cultures were incubated aerobically.

In vitro tests of sensitivity to streptomycin were carried out on the organisms isolated before the institution of therapy and in most instances were repeated on the strains which could be recovered following treatment. The organism to be tested was inoculated into a series of tubes containing graded concentrations of streptomycin in 5 cc. of 2 per cent proteose peptone broth (Difco) adjusted to p_H 7. The results were read as the lowest concentration of streptomycin which completely inhibited growth, as judged by the absence of gross turbidity after forty-eight hours of incubation.

Determinations of the concentrations of streptomycin in serum and in urine were made by a modification[2] of the method described by Stebbins and Robinson.[4] The serum specimens which were obtained during therapy were taken at times judged to represent the maximum and minimum concentrations for the particular dosage schedule employed.

From the departments of internal medicine and surgery, University Hospital, University of Michigan

These studies were aided by grants from the Executive Committee and from the Board of Governors of the Horace H. Rackham School for Graduate Study of the University of Michigan

The authors are indebted to Dr. Reed M Nesbit for the opportunity to study many of these cases. Cases 7 and 11 were studied through the cooperation of Dr. Rigdon K Ratliff.

The streptomycin sulfate used in case 5 was supplied by the Chas Pfizer & Company, Inc, Brooklyn The streptomycin hydrochloride used in all other cases was supplied by Merck & Co, Inc, Rahway, N J.

Technical help was given by Miss Minnie May Soo-Hoo, Miss Dorothy Artis and Miss Viola Connor

Read in the Symposium on "The Use of Antibiotics in Urinary Infections" before the Section on Urology at the Ninety Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946

[1] Buggs, C W, Bronstein, B, Hirshfeld, J. W., and Pilling, M. C The in Vitro Action of Streptomycin on Bacteria, J. A M A **130:** 64 67 (Jan 12) 1946 Helmholz, H. F. The Effect of Streptomycin on Bacteria Commonly Found in Urinary Infections, Proc Staff Meet, Mayo Clin **20:** 357 362 (Oct 3) 1945 Robinson, H. J., Smith, D G, and Graessle, O E Chemotherapeutic Properties of Streptomycin, Proc. Soc Exper Biol & Med **57:** 226 231 (Nov) 1944 Schatz, A, Bugie, E, and Waksman, S. A · Streptomycin, a Substance Exhibiting Antibiotic Activity Against Gram Positive and Gram Negative Bacteria, ibid. **55:** 66 69 (Jan) 1944.

[2] Adcock, J D, and Hettig, R A · Absorption, Distribution and Excretion of Streptomycin, Arch Int Med **77:** 179 194 (Feb) 1946 Heilman, D H ; Heilman, F R [illegible] D R., and Herrell, W E Streptomycin [illegible] retion and Toxicity, Am J. M Sc **210:** [illegible] el, H A, Flippin, H A, Nichols, A C [illegible] ds, J. E Studies on Streptomycin in Man [illegible] Excretion and Toxicity, ibid **210:** 421-430

[3] The unit of streptomycin was originally defined in terms of its activity against Esch coli The activity of 1 microgram of streptomycin base closely approximates that of the original unit, and it is expected that amounts of streptomycin will be expressed in terms of weight, i. e., 1,000,000 units is equivalent to 1 Gm of pure [illegible]

[4] Stebbins, R B, and Robinson, H. J · A [illegible] of Streptomycin in Body Fluids, Proc. Soc E [illegible] 255 257 (June) 1945.

REPORT OF CASES

CASE 1.—I. B., a boy aged 15, was admitted on Jan. 8, 1945, complaining of fever and malaise. His temperature was 103 F. His urine was cloudy with leukocytes; a few red blood cells were present, and stains of the sediment showed gram-positive bacilli. Intravenous pyelograms were normal. His temperature gradually subsided to normal and on January 28 cystoscopy revealed a papillomatous mass in the bladder. Biopsy of this mass was suggestive of rhabdomyosarcoma. On this evidence a partial cystectomy was done on March 2 with removal of a thickened granulomatous area of the bladder. This specimen revealed only severe chronic cystitis without neoplasm.

He was discharged on March 15 but returned in two weeks complaining of chills and fever. His urine was still purulent. During the next three weeks he had four bouts of fever which were not influenced by the administration of sulfadiazine, 6 Gm. per day, or of penicillin, 160,000 units per day. The urine on two occasions revealed a pure culture of Aerobacter aerogenes which was completely inhibited in vitro by 0.8 microgram of streptomycin but not by 0.4 microgram.

On April 24 the administration of streptomycin was started, 1 Gm. per day being given by intravenous infusion for five days. On the fifth day a rash resembling erythema nodosum appeared and promptly subsided when streptomycin therapy was discontinued. After twenty-four hours of therapy the urine showed only an occasional leukocyte. It was sterile when cultured two days and six days, respectively, after the discontinuance of streptomycin. The patient was seen three months later and stated that he had been perfectly well. His urine was normal, and cystoscopy showed a well healed scar in the bladder.

CASE 2.—C. J., a man aged 47, was first seen in May 1944 complaining of headaches and pain in the right flank. His blood pressure was elevated, and intravenous pyelography showed hydronephrosis and hydroureter on the right. Cystoscopy demonstrated a ureterocele on the right which was destroyed by fulguration in August 1944. One week later he was readmitted complaining of chills, pain in the right flank and burning on urination. His temperature was 102 F. There was decided tenderness in the region of the right kidney. His urine was grossly purulent, and stains of the sediment showed gram-negative bacilli. The pain and fever subsided coincident with the administration of sulfadiazine, but the urinary findings remained unchanged. During the succeeding nine months he had innumerable similar episodes. His urine was constantly loaded with pus and bacilli. Several courses of sulfadiazine were without effect on the clinical course or urinary findings. He was readmitted on May 22, 1945 and was given a ten day trial of penicillin, 320,000 units per day, combined with sulfadiazine, 2 Gm. per day, without change in the urine. Each of two urine cultures revealed A. aerogenes which was completely inhibited in vitro by 1.5 micrograms of streptomycin but not by 1 microgram.

On June 8 the intramuscular administration of streptomycin was started, 0.25 Gm. being given every three hours for nine days, a total of 18 Gm. Concentrations of streptomycin in the serum varied from 14 to 25 micrograms per cubic centimeter and in the urine from 700 to 1,600 micrograms per cubic centimeter. Within three days the urine showed only a rare leukocyte and stains revealed no organisms. Urine cultures taken three days after the discontinuation of streptomycin were sterile.

The patient was seen four months later and stated that he had been perfectly well. His urine was normal and was sterile on culture.

CASE 3.—E. T., a man aged 78, had a perineal prostatectomy in 1939. In August 1944 obstructive symptoms returned and a transurethral resection was performed. He was again admitted on Oct. 29, 1945 stating that moderate dysuria and gross pyuria with "clots" had been present for one year. He stated that sulfonamide drugs had never given relief and he had been in another hospital for a ten day period, four weeks previously; while there he had been given both penicillin and sulfadiazine without any change in status. On admission his urine was purulent and repeatedly gave a pure culture of A. aerogenes which was completely inhibited in vitro by 1 microgram of streptomycin but not by 0.8 microgram. Cystometric studies demonstrated an atonic bladder with 200 cc. of residual urine. On November 12 intramuscular streptomycin was started, 0.1 Gm. being given every three hours for five days, a total of 4 Gm. Concentrations of streptomycin in the serum varied from 8 to 11 micrograms per cubic centimeter and in urine from 220 to 320 micrograms per cubic centimeter. Three days after initiating therapy his urine showed only an occasional leukocyte and was sterile, as was a specimen taken six days after the discontinuation of streptomycin. He returned two months later stating that he had been free of urinary symptoms. Routine urinalysis was negative and culture of the urine showed no growth.

CASE 4.—J. W., a man aged 31, diabetic since the age of 12, was first seen in April 1944 with severe diabetic neuropathy requiring amputation on the right foot. Cystometric studies revealed an atonic bladder with 1,200 cc. of residual urine, which was infected. During the next year his diabetes was carefully controlled with improvement in the neuropathy and a return of normal bladder function.

In October 1945 there developed severe dysuria and pyuria which persisted unchanged through several courses of sulfadiazine and one course of mandelic acid. In November and December the urine yielded A. aerogenes on culture. The patient was readmitted on Jan. 5, 1946. His urine was grossly purulent and gave a pure culture of A. aerogenes which was completely inhibited in vitro by 0.8 microgram of streptomycin but not by 0.4 microgram.

Streptomycin therapy was started on January 8, being given by continuous subcutaneous infusion at the rate of 1 Gm. per day. It was discontinued because of an elevation of temperature to 102 F. after a total of 2.5 Gm. of the drug had been given. Concentrations of streptomycin in serum ranged from 10 to 14 micrograms per cubic centimeter and in urine from 190 to 160 micrograms per cubic centimeter. The urine gave a positive culture twenty-four hours after starting therapy but thereafter was sterile and showed only an occasional leukocyte. One month later the patient stated that he had been free of urinary symptoms. Urinalysis was negative, and cultures of urine were sterile.

CASE 5.—F. R., a man aged 44, had been followed since 1931 when his difficulties with renal calculi began. Pyelolithotomy had been performed on the right side in 1933, in 1937 and again in March 1945. A large calculus was removed from the left renal pelvis in May 1945. During this time he was seen repeatedly, and his urine was always purulent. Sulfonamide compounds and penicillin had been given without altering the urinary findings. The urine was first cultured in June 1945 and showed Aerobacter cloacae and a few colonies of Staphylococcus aureus. Cultures made Jan. 9 and Jan. 13, 1946 yielded only A. cloacae which was completely inhibited in vitro by 0.8 microgram of streptomycin but not by 0.4 microgram. Pyelography showed some distortion of the calices but no stones.

On January 15 streptomycin was started, 0.4 Gm. being given every four hours for four days, a total of 9.6 Gm. Concentrations of streptomycin in serum ranged from 26 to 48 micrograms per cubic centimeter and in urine from 800 to 900 micrograms per cubic centimeter. Cultures of urine remained positive for forty-eight hours but were negative thereafter. His urine promptly became grossly clear, but the sediment continued to show numerous leukocytes. Cultures of urine were sterile ten days after the discontinuation of streptomycin but one month later showed Staph. aureus.

The organisms responsible for the infection in the above 5 patients (A. aerogenes in cases 1 through 4 and A. cloacae in case 5) were quite sensitive to streptomycin as judged by in vitro testing. In each case, the concentration of streptomycin in the serum was found to be, or could be inferred to be, approximated ten or more times that required for inhibition of the infecting organism in vitro. After streptomycin therapy there was prompt relief of symptoms, and pyuria disappeared. Urine cultures were sterile within forty-eight hours and remained free of these organisms thereafter.

CASE 6.—W. C., a boy aged 2, began to have pain on urination in March 1945. A greatly distended bladder was found and a suprapubic cystostomy was performed in another hospital. He was transferred to the University Hospital on May 22. On admission there was a suprapubic opening into the bladder. His urine yielded Esch. coli on culture, and he was started on sulfadiazine, 1 Gm. per day. Intravenous pyelograms showed no function on the right and hydronephrosis with hydroureter on the left. On May 28 an endoscopic examination revealed congenital urethral valves, which were destroyed by fulguration. Subsequent to this procedure penicillin, 80,000 units per day, was started and the administration of sulfadiazine was continued. Despite the combined medication the patient began to run a septic fever, and urine cultures taken on June 24 yielded only Ps. aeruginosa which was completely inhibited in vitro by 20 micrograms of streptomycin but not by 16 micrograms. It is probable that Esch. coli was also present but was completely overshadowed by the other organism. All medication was discontinued on June 24.

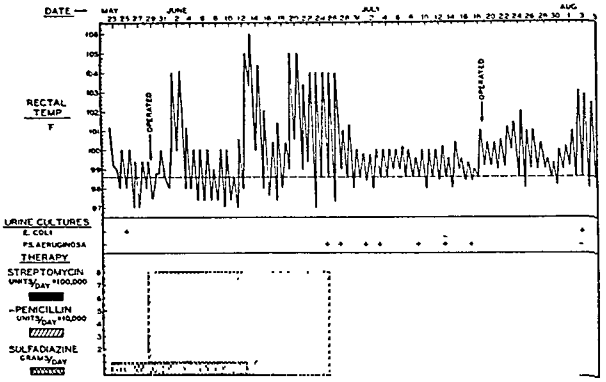


Chart 1 (case 6).—Effect of streptomycin in a patient with acute pyelonephritis due to Ps. aeruginosa and Esch. coli.

On June 26 streptomycin was started, 50 milligrams being given intramuscularly every three hours. After thirty-six hours the dosage was increased to 0.1 Gm. every three hours for eight days, after which it was reduced to the original level. A total of 16.6 Gm. of the drug was given over a period of thirty-seven days. Concentrations of streptomycin in the serum ranged from 6 to 32 micrograms per cubic centimeter and in urine from 160 to 250 micrograms per cubic centimeter.

Chart 1 illustrates the clinical course of this patient. The rectal temperature promptly declined to normal and the pyuria diminished. Cultures of the urine, however, continued to reveal Ps. aeruginosa until the functionless right kidney was removed on July 20, following which Esch. coli reappeared in cultures. The latter organism was not inhibited in vitro by 200 micrograms of streptomycin, and for this reason therapy was discontinued on August 2. During the time that streptomycin was being administered, however, the suprapubic tube was removed, the cystostomy opening healed and the child began to void normally, with 50 cc. of residual urine. After the discontinuation of streptomycin he was given mandelic acid, 12 Gm. daily for twelve days, and was discharged on September 3 with a sterile urine. He was seen three months later with a recurrence of the infection due to a staphylococcus.

CASE 7.—G. T., a man aged 67, had a transurethral prostatectomy on Oct. 10, 1945. Four days later, following a chill, his temperature rose to 104 F. He was given sulfadiazine, at first in dosages of 2 Gm. per day and later in dosages raised to 5 Gm. per day, and 160,000 units of penicillin per day. There was some initial improvement, but the chills and fever reappeared despite continued medication and decided tenderness developed in the region of the left kidney. The urine was grossly purulent, and the leukocyte count rose to 24,000. Urine cultures on October 28 gave a pure culture of Ps. aeruginosa which was completely inhibited in vitro by 16 micrograms of streptomycin but not by 12 micrograms. Administration of penicillin and sulfadiazine was discontinued October 29.

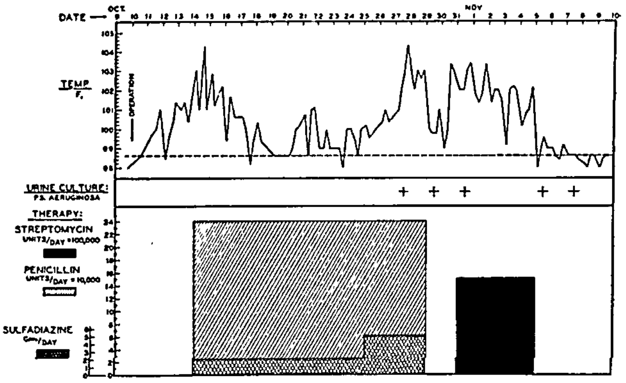


Chart 2 (case 7).—Effect of streptomycin in a patient with acute pyelonephritis due to Ps. aeruginosa.

Streptomycin therapy was started November 1, the drug being given by continuous subcutaneous infusion at the rate of 1.5 Gm. per day for four days. Concentrations of streptomycin in the serum varied from 8 to 17 micrograms per cubic centimeter and in urine from 120 to 230 micrograms per cubic centimeter. Chart 2 illustrates the clinical course of this patient. The pyuria and the tenderness of the flank disappeared promptly, and the leukocyte count dropped to 13,000 although the temperature remained elevated until streptomycin was discontinued. Urine cultures, however, remained positive throughout the period of observation. The patient was again seen in January 1946, at which time he stated that he had been entirely well and his urine had remained clear. Routine urinalysis was then negative, but Ps. aeruginosa was recovered on culture. The in vitro sensitivity of this strain was identical with that of the strain originally isolated.

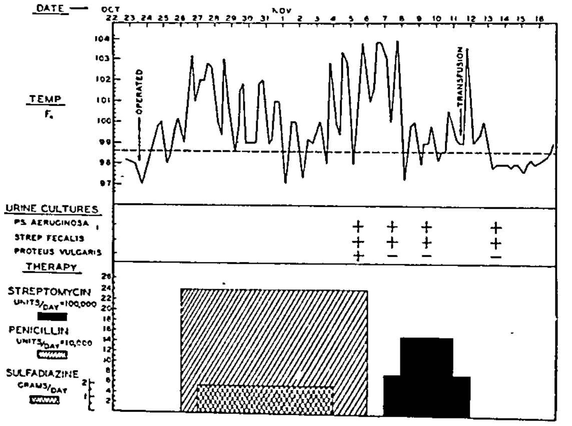


Chart 3 (case 8).—Effect of streptomycin in a patient with acute pyelonephritis due to Ps. aeruginosa, P. vulgaris and Strep. fecalis.

CASE 8.—K. S., a man aged 73, had a transurethral prostatic resection on Oct. 3, 1945. Three days later he had a severe chill and his temperature rose to 104 F. During the next ten days his condition remained essentially unchanged despite the administration of penicillin, 320,000 units per day, and sulfadiazine, 2 Gm. per day. On November 4 he was lethargic and there was well defined costovertebral angle tenderness bilaterally. Cultures of the urine at this time yielded Ps. aeruginosa, P. vulgaris and Strep. fecalis. When tested in vitro the Pseudomonas strain was completely inhibited by 4 micrograms of streptomycin but not by 2 micrograms, the Proteus was inhibited by 0.8 microgram but not by 0.4 microgram, while the Streptococcus required 20 micrograms for inhibition but grew in 16 micrograms. All medication was stopped on November 5, but drainage by indwelling catheter was maintained.

Streptomycin was started on November 7, being given by continuous intravenous infusion at the rate of 1.5 Gm. per day. After twenty-four hours thrombophlebitis developed in the recipient vein, and thereafter the same daily dose was given by subcutaneous infusion. Treatment was continued for four days, the total dose being 6 Gm. Concentrations of streptomycin in serum varied from 13 to 26 micrograms per cubic centimeter and in urine from 560 to 660 micrograms per cubic centimeter. The temperature promptly declined to a maximum of 100 F., except for one rise which followed the transfusion of blood. Chart 3 illustrates the clinical course of this patient. Urine cultures obtained during and following therapy showed that the Ps. aeruginosa and Strep. fecalis were still present. In vitro studies of sensitivity to streptomycin were carried out on the organisms isolated the day after therapy was discontinued. These organisms, presumably descendants of the original strains, were now decidedly resistant to streptomycin, the Ps. aeruginosa requiring 200 micrograms for inhibition, while the Strep. fecalis was not inhibited by 1 mg.

The patient was discharged on November 21 with 450 cc. of residual urine which was purulent. It has not been possible to follow him but from correspondence it has been learned that he suffered a relapse on leaving the hospital and was having intermittent chills and fever, unrelieved by the use of penicillin or sulfonamide compounds.

The last 3 patients (cases 6, 7 and 8) were suffering from acute episodes of pyelonephritis and obtained little or no relief from the administration of sulfonamide compounds and penicillin. Ps. aeruginosa was present in all 3 cases. It was apparently entirely responsible for the infection in case 7, while other bacteria probably contributed to the illness in cases 6 and 8. The strains of Ps. aeruginosa present in these cases were fairly resistant, and the concentration of streptomycin in serum rarely exceeded by any considerable margin the concentration required for inhibition in vitro. Streptomycin appeared to be of considerable value in controlling the more acute manifestations of the infections, but relapse occurred in cases 6 and 8. Cultures of urine obtained after the discontinuation of streptomycin therapy consistently yielded Ps. aeruginosa in all 3 cases.

Case 9.—J. H., a man aged 31, was first seen in May 1945 complaining of severe urgency, frequency and dysuria. His urine was purulent, and cultures showed Ps. aeruginosa. Cystoscopic examination demonstrated slight contraction of the vesicle neck. Retrograde pyelograms were normal. During the next three months he was given sulfadiazine, sulfacetimide, mandelic acid and penicillin at various times without changing the purulent character of his urine and with only temporary relief of symptoms. A culture of his urine on August 3 again yielded Ps. aeruginosa which was completely inhibited in vitro by 20 micrograms of streptomycin but not by 16 micrograms.

On August 6 streptomycin therapy was started, 0.125 Gm. being given intramuscularly every three hours for three days, a total of 3 Gm. It was discontinued following the appearance of a maculopapular rash. Concentrations of streptomycin in the serum ranged from 7 to 10 micrograms per cubic centimeter and in the urine from 220 to 500 micrograms per cubic centimeter. Urine cultures were positive at twenty-four and forty-eight hours after the start of therapy but were negative at the time streptomycin was discontinued. Cultures were again positive twenty-four hours after discontinuing administration of the drug. Pyuria diminished during therapy but promptly reappeared when streptomycin was discontinued. The patient was seen five months later, at which time Ps. aeruginosa was again isolated from the urine. The sensitivity of this strain was identical to that of the strain first tested.

In this case of chronic infection of the lower part of the urinary tract due to Ps. aeruginosa, there was temporary suppression of the infection during treatment with prompt relapse after streptomycin therapy was discontinued.

Case 10.—E. J., a man aged 47, had a history of renal colic dating to 1934. At that time bilateral renal calculi were surgically removed. He had been followed in this hospital since 1938, with several admissions during which he passed calculi. In 1942 a left pyelolithotomy was performed. During all this time his urine was grossly purulent.

He was last admitted on Aug. 4, 1945 complaining of pain in the flank, chills and fever. Intravenous pyelography showed a staghorn calculus on the right with slight distortion of the calices on the left. A right pyelolithotomy was performed August 9, and convalescence was uneventful. His urine remained purulent, however, and did not change with the administration of penicillin, 160,000 units per day. Repeated urine cultures showed the presence of Ps. aeruginosa and K. granulomatis. The former was completely inhibited in vitro by 30 micrograms of streptomycin but grew in 20 micrograms. The latter organism was inhibited by 0.4 microgram but grew in 0.2 microgram.

Streptomycin was started on August 27, being given by continuous intravenous infusion at the rate of 2 Gm. per day. It was discontinued after a total of 4 Gm. had been given because of a rise in temperature to 102 F. associated with generalized aching. The concentration of streptomycin in serum was found to be 38 micrograms per cubic centimeter in the single specimen which was obtained. Concentrations of streptomycin in the urine were not determined. After the discontinuation of streptomycin therapy routine urinalysis was negative, but Ps. aeruginosa was isolated by culture. The patient was last seen on Jan. 26, 1946 when routine urinalysis was again negative. Ps. aeruginosa was, however, again obtained from urine cultures. The in vitro sensitivity of this strain was identical to that of the strain originally isolated.

In this patient it was difficult to be certain which of the two organisms was mainly responsible for maintaining the pyuria. The K. granulomatis, which was relatively sensitive in vitro, disappeared, while the more resistant organism, Ps. aeruginosa, remained without producing symptoms. The concentration of streptomycin in the serum was many times that required for in vitro inhibition of the Klebsiella strain but barely exceeded the in vitro sensitivity of the Pseudomonas.

Case 11.—E. B., a woman aged 70, had complained of mild dysuria and frequency for four years. During this time the urinary sediment showed many leukocytes and bacilli. She had at various times been given azosulfamide (Neoprontosil), mandelic acid, sulfathiazole, sulfadiazine and sulfamerazine with temporary relief. In November 1945 all medication was discontinued and two urine cultures showed only Esch. coli. This organism was completely inhibited in vitro by 1.0 microgram of streptomycin but grew in 0.8 microgram.

On November 27 the administration of streptomycin was started, 0.1 Gm. being given intramuscularly every three hours for five days, a total of 4 Gm. Concentrations of streptomycin in serum varied from 7 to 12 micrograms per cubic centimeter and in urine from 270 to 300 micrograms per cubic centimeter. Daily cultures of the urine were positive throughout treatment. A culture taken two days after the discontinuation of streptomycin therapy became contaminated in handling and in vitro studies were not made. A culture obtained two weeks later again showed Esch. coli, and this strain grew in 1 mg. of streptomycin. During therapy the patient experienced slight relief of symptoms.

In this patient bacilluria persisted despite the fact that the concentration of streptomycin in the serum was several times the in vitro sensitivity of the infecting organism.

COMMENT

Results of Therapy.—The results of streptomycin therapy were most impressive in the 5 patients with chronic infections due to organisms of the Aerobacter group. Coincident with the administration of streptomycin there was prompt relief of symptoms, pyuria disappeared and urine cultures became sterile. These effects persisted after streptomycin was discontinued, attesting to actual termination of the infection rather than a temporary suppressive effect.

The 5 cases in which Ps. aeruginosa was present, alone or in combination with other organisms, responded less satisfactorily. In each case pyuria diminished or disappeared, and there was a rapid decline in temperature in those cases with acute episodes. Ps. aeruginosa was, however, constantly present in urine cultures following therapy. In case 6 this organism disappeared during therapy, but its disappearance followed nephrectomy and was probably not due to the use of streptomycin.

Summary of Results of Streptomycin Therapy

Case	Bacteria Present Before Streptomycin Therapy	In Vitro: *Streptomycin* Required for Inhibition, Micrograms per Cc	Concentration of *Streptomycin* in Serum, Micrograms per Cc		Bacteria Present After Treatment	In Vitro: *Streptomycin* Required for Inhibition, Micrograms per Cc	Total Dose, Gm	Duration, Days	Routes *
			Maximum	Minimum					
1	A. aerogenes	0.8	.		0		5.0	5	I. V.
2	A. aerogenes	1.5	25	14	0	..	18.0	9	I. M.
3	A. aerogenes	1.0	11	9	0	...	4.0	5	I. M.
4	A. aerogenes	0.8	14	10	0	..	2.5	2½	S. C.
5	A. cloacae	0.8	48	26	0	..	9.6	4	I. M.
6	Esch. coli Ps. aeruginosa †	. 20.0	32	6	Esch. coli	200+	16.6	37	I. M.
7	Ps. aeruginosa	16.0	17	8	Ps. aeruginosa	16	6.0	4	S. C.
8	Ps. aeruginosa Str. fecalis P. vulgaris . .	4.0 20.0 0.8	26	13	Ps. aeruginosa Strep. fecalis	200 1,000+	6.0 .	4 ..	I. V. S. C.
9	Ps. aeruginosa	20.0	10	7	Ps. aeruginosa	20	3.0	3	I. M.
10	Ps. aeruginosa K. granulomatis	30.0 0.4	38	..	Ps. aeruginosa	20	4.0	2	I. V.
11	Esch. coli	1.0	12	7	Esch. coli	1,000+	4.0	5	I. M.

* I. M., intramuscular injection; I. V., continuous intravenous infusion and S. C., continuous subcutaneous infusion

† This organism disappeared from the urine following nephrectomy. It is doubtful that streptomycin was responsible for its disappearance

One case of chronic cystitis due to Esch. coli was treated with streptomycin with temporary relief of symptoms and some diminution of pyuria, but the bacilluria persisted. Most infections of the urinary tract due to Esch. coli respond satisfactorily to sulfonamide drugs and for this reason only 1 such case was included in this series.

In most instances a bactericidal effect was obtained when the concentration of streptomycin which was maintained in the serum was approximately ten or more times as great as that required for inhibition of the infecting organism in vitro (see the accompanying table). The effect appeared to be merely bacteriostatic against the more resistant organisms, however, in cases in which the sensitivity of the infecting organism more nearly approached the concentrations attained in serum. The demonstration[2] that the concentration of streptomycin in various tissues is far below that found in the serum may help to explain these relationships. It is probable that additional factors, as yet unknown, are important in determining the outcome of therapy. Although streptomycin appears in the urine in high concentration, it is doubtful that this is of importance in therapy since, in an established infection, there must certainly be invasion of tissue as well as infection of the urine itself.

It should be emphasized that dosage was often determined by the supply of streptomycin which was available and, in many instances, was probably inadequate both in the amount given daily and in the duration of treatment. A much larger dosage is feasible and might be expected to give better results in those infections due to bacteria which are naturally somewhat resistant to streptomycin. So far as comparison is possible, the result obtained in these cases are in general agreement with those previously reported.[5]

Development of Resistance to Streptomycin.—The fact that bacteria may develop increased resistance or tolerance to various chemotherapeutic substances is now widely recognized and is assuming increasing importance in the treatment of infections. It would appear from the experiments of Miller and Bohnhoff[6] that streptomycin is unusually vulnerable in this respect. These in vitro experiments demonstrated that gonococci and meningococci, originally inhibited by concentrations of streptomycin below 40 micrograms per cubic centimeter, readily acquired sufficient tolerance (within six days) to allow them to grow on mediums containing 75 mg. per cubic centimeter. That bacteria may develop increased resistance to streptomycin in vivo has been demonstrated by Buggs, Bronstein, Hirshfeld and Pilling.[1]

Among the bacteria which were isolated following therapy in the cases here reported, there were three organisms that apparently acquired an increased tolerance to streptomycin (see the accompanying table). In case 8 the strain of Ps. aeruginosa which was recovered just prior to therapy was inhibited in vitro by 4 micrograms of streptomycin, while the strain isolated after four days of treatment required 200 micrograms for inhibition. In this same patient the strain of Strep. fecalis which was initially present was inhibited by 20 micrograms but after four days' exposure to streptomycin it grew well in 1 mg. Similarly, a strain of Esch. coli isolated after five days of treatment from case 11 was able to grow in 1 mg. of streptomycin whereas the pretreatment strain was sensitive to 1 microgram. A fourth organism, the Esch. coli isolated from case 6 at the end of treatment, was not inhibited by 200 micrograms of streptomycin. It is probable that this also represents acquired resistance, although the original sensitivity is unknown. These organisms, though their maximum tolerance to streptomycin was not determined, were certainly totally resistant from the clinical point of view.

---

[5] Herrell, W. E., and Nichols, D. R.: The Clinical Use of Streptomycin: A Study of Forty Five Cases, Proc. Staff Meet., Mayo Clin. **20:** 449-462 (Nov. 28) 1945. Reimann, H. A.; Price, A. A., and Elias, W. F.: Streptomycin for Certain Systemic Infections and Its Effect on the Urinary and Fecal Flora, Arch. Int. Med. **76:** 269-277 (Nov.-Dec.) 1945.

[6] Miller, C. P., and Bohnhoff, M.: Streptomycin Resistance of Gonococci and Meningococci, J. A. M. A. **130:** 485-488 (Feb. 23) 1946.

Unfortunately, the in vitro sensitivity of the strains of Ps. aeruginosa which persisted following therapy in 3 patients was not tested until several weeks or months had elapsed. In each case the sensitivity was identical with that of the original strain. It is impossible to state, however, that the sensitivity was not altered by the exposure incident to therapy.

The clinical implications of this phenomenon seem clear. Should it prove to be of frequent occurrence, the size of the initial dosage of streptomycin will be of extreme importance, and if a bactericidal effect is to be obtained it must be obtained promptly. It is apparent that many problems remain, particularly in regard to the relationship of dosage to the type of infecting organisms.

Toxicity.—Generalized reactions consisting of fever and arthralgias occasionally accompanied by various types of rashes were encountered in patients who received certain rather crude lots of streptomycin. These same lots were productive of irritation at the site of injection and in 1 case led to the development of thrombophlebitis. The more purified preparations, however, gave no evidence of toxicity over the short interval of their use in these patients.

SUMMARY

Streptomycin has been used in the treatment of 11 patients with urinary tract infections due to gram-negative bacilli which had failed to respond to treatment with sulfonamide compounds or penicillin or a combination of the two.

The 5 patients with infections due to organisms of the Aerobacter group obtained prompt relief of symptoms, pyuria disappeared and the urine became and remained sterile. These organisms were extremely sensitive to streptomycin in vitro.

The 5 patients in whom Pseudomonas aeruginosa was present alone or in combination with other bacteria experienced relief of symptoms, and pyuria diminished or disappeared. These effects were often temporary, and bacilluria persisted in each case. These organisms were fairly resistant to streptomycin in vitro.

In several instances the strains of bacteria which were isolated after therapy were much more resistant to streptomycin in vitro than were the strains (presumably the same) which had originally been recovered.

Streptomycin promises to be a useful adjunct to other chemotherapeutic agents in the treatment of certain resistant infections involving the urinary tract.

PRESENT CONCEPTS OF TREATMENT OF INFECTIONS OF THE URINARY TRACT

THOMAS L. POOL, M.D.
and
EDWARD N. COOK, M.D.
Section on Urology, Mayo Clinic
Rochester, Minn.

Until about fifteen years ago management of infections of the urinary tract was carried out in an empirical fashion. The patient who complained of the usual symptoms of such infections consulted a physician and was given a prescription on the basis of his complaint, and no consideration was given to the type or degree of infection present. Little or no attention was paid to co-existing pathologic conditions. Fortunately, due to the advances that have been made in this field in the past fifteen years, present methods of treatment are much more scientific and results obtained in treatment of these infections are more satisfactory.

The early work of Scholl, Janney, Clark, Helmholz and many others has shown the importance of proper bacteriologic study of the urine. If facilities for making cultures of the urine are not available or their use is not practicable, the use of Gram's stain is of the greatest help and will suffice in most instances. Careful microscopic examinations of the urinary sediment must be carried out. In the male it is essential that a clean second glass specimen of urine be obtained, and in the female a specimen obtained by catheterization is the only satisfactory means of ascertaining the exact nature of the disease. Too often patients who had infections of the urethra and prostate were given long courses of oral treatment with one or another of the therapeutic compounds when pyuria was not present.

A study of the acidity of the urine has been of value from the time of the earliest work in this field. The efficacy of methenamine depends on the liberation of formaldehyde in an acid medium, and today, when the proper urinary p_H can be obtained, this drug is still of considerable value when used alone or in conjunction with mandelic acid. The satisfactory administration of the ketogenic diet results in the liberation of certain organic acids in the urine, and when the urine has a sufficiently low p_H bacteriostasis results. Because of the difficulties encountered in administering the ketogenic diet, the introduction of treatment with mandelic acid was a distinct step forward. Also in order for mandelic acid to exert the desired effect in the urine a certain degree of acidity is necessary. It is impossible to depend on acidification alone to produce bacteriostasis, as the metabolism of the body will not allow the production of a sufficient degree of acidity.

The most important single factor in the successful use of any of the drugs now available for treatment of urinary infections is the presence or absence of complications. Early in the work with the ketogenic diet and later with the newer antibiotic agents as they were developed, it was found that eradication of infection was much simpler and easier to bring about if other pathologic conditions, such as chronic cicatricial inflammatory changes, tumor, stone, obstruction, residual urine or foreign body did not coexist. If any of these complications exist, they must be cared for before the infection can be eradicated.

Read in the Symposium on "The Use of Antibiotics in Urinary Infections" before the Section on Urology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

MANDELIC ACID

The discovery of mandelic acid by Rosenheim presented the medical profession with the first specific therapeutic compound for treatment of infections of the urinary tract. In spite of the newer antiseptic drugs which have been developed in the past decade, this older drug has not been outmoded. Its greatest value lies in the fact that when indications for its use are present it may be given and few signs of toxicity will develop if a few important points are kept in mind.

Commercially the drug is manufactured in many forms, and it makes little difference which preparation is used. Early work at the Mayo Clinic led us to believe that a daily dose of 12 Gm. mandelic acid was necessary to render the urine bacteriostatic. However, experience has taught that a dose of 8 Gm. a day is sufficient to obtain a satisfactory concentration of the drug in the urine if the intake of fluid is reduced to 1,500 cc. a day.

For mandelic acid to be successful as a urinary antiseptic, not only is a concentration of 0.5 per cent in the urine necessary but also the p_H of the urine must be 5.5 or lower. In our experience administration of this drug for six to eight days is usually sufficient to eradicate the infection if it is amenable to this treatment. The continued administration of the drug for a longer period is attended with little benefit, and we consider it better to stop administration and give a second course in ten to fourteen days.

If the patient has normal renal function, the drug is relatively innocuous. Some patients complain of nausea and vomiting after they have taken mandelic acid, but this evidence of toxicity can be kept at a minimum if the dosage is reduced for the first twenty-four hours. If patients have disturbed renal function, mandelic acid is definitely irritating to the kidneys and may cause secondary increase in the concentration of blood urea. In our opinion if the level of the blood urea is 50 mg. or more per hundred cubic centimeters administration of the drug is contraindicated. In the older age groups this drug is definitely not well tolerated, and if its use is necessary it should be given with care.

The efficacious use of mandelic acid is confined to those cases in which infection is caused by gram-negative bacilli or Streptococcus fecalis. In those cases in which other streptococci or staphylococci are responsible for the disease the drug is of little value.

SULFONAMIDE COMPOUNDS

The introduction of the sulfonamide compounds approximately ten years ago was another step forward in the management of infections of the urinary tract. Today many varied forms are obtainable for clinical use. In our experience sulfathiazole and sulfacetimide are as satisfactory as any of the other forms in treatment of urinary tract infections although all the other forms of the sulfonamide drugs are used frequently with good results and should be tried in those cases in which the patient does not tolerate any one particular form. We feel that administration of the sulfonamide compounds in doses of more than 30 to 40 grains (2 to 2.6 Gm.) a day is seldom indicated in combating infections of the urinary tract. Doses greater than this, we believe, do not offer anything further in the management of these cases. If the daily dose is kept at 30 to 40 grains (2 to 2.6 Gm.) and the intake of fluid is at least 2,000 to 2,500 cc. a day, renal complications are infrequently encountered.

A good general rule to bear in mind is: always observe the patient closely. When any patient is given the drug he should be seen by a physician within twenty-four hours and checked for any signs of toxic reactions. If cyanosis, nausea and vomiting, fever or cutaneous reactions are present, further administration of the drug should be undertaken with great care. Less important symptoms, such as headache, vertigo, malaise and weakness, do not necessarily require that administration of the drug be stopped but they do indicate that careful observation of the patient should be continued.

Usually reduced renal function is not a contraindication to use of the sulfonamide drugs, and it is not necessary, with the low dosage required in treatment of infections of the urinary tract, to submit patients to detailed and frequent blood studies while they are undergoing treatment. A limited number of patients have an idiosyncrasy to these drugs, and this can be discerned early if a close clinical check is kept on the patient in the first twenty-four hours that he takes the drug.

The sulfonamide compounds usually are considered to be effective against most of the gram-negative organisms infecting the urinary tract and most of the gram-positive cocci, with the exception of Str. faecalis.

ARSENICAL COMPOUNDS

The intravenous use of arsenical compounds has long been known to be of value in combating coccal infections of the urinary tract as well as certain bizarre infections, such as so-called amicrobic pyuria. The dose required is less than that given to combat syphilis. In former years neoarsphenamine was usually used in combating the coccal infections of the urinary tract, but more recently many observers have reported equally as good results and fewer toxic reactions with oxophenarsine hydrochloride. The dose of oxophenarsine hydrochloride is 0.03 to 0.04 Gm. given intravenously. This dose is given every four or five days until three doses have been administered. If any disturbance of renal function is present, it is well to consider some form of treatment other than administration of the arsenical drugs.

PENICILLIN

Penicillin was heralded as a cure for almost all infections. It has been given a fairly complete clinical trial, and we find it has not proved to be of great value in combating the usual nonspecific infections of the urinary tract. The excellent results with this drug in treatment of gonorrheal infections are well known. In certain cases of staphylococcic infections and perhaps of some infections caused by Str. faecalis penicillin has clinical value, especially when large doses are used. However, in the usual cases of infections of the urinary tract in which gram-negative bacilli are the causative organisms this drug is of questionable value. The varied results obtained in these cases suggest the possibility of a variation of the sensitivity of various strains of gram-negative bacilli to penicillin.

Because of the general public interest and demand, a small series of patients who had interstitial cystitis were treated with a thorough course of penicillin at the Mayo Clinic. All the patients thought at first that they received benefit, but this benefit was of short duration. None of these patients received permanent relief of symptoms.

An uncommon complication following transurethral manipulation for diagnosis of stone, litholapaxy or prostatic resection is periurethral inflammation. In a few cases in which this inflammation has progressed and abscesses have formed, intramuscular administration of penicillin has proved to be of the greatest value. It might be said that the results have been almost spectacular, for within twenty-four hours after the patient has received the first dose of penicillin periurethral inflammation has diminished rapidly. This has seemed to be true particularly when penicillin has been given intramuscularly in conjunction with oral administration of one of the sulfonamide drugs.

The synergistic action of penicillin with other therapeutic agents has not been tested adequately as yet, and further clinical investigation will be necessary for proper evaluation of this possible action.

STREPTOMYCIN

The stimulus provided by the discovery of some effective bactericidal agents has increased the amount of investigative work that has been done in the past few years. Penicillin, actinomycin and gramicidin have proved to be effective against gram-positive organisms but have had little effect on the gram-negative organisms. In the search for a substance which would be bactericidal in its effect on organisms of all types, Schatz, Bugie and Waksman in 1944 described the isolation of a new antibacterial substance, streptomycin, from the culture filtrate of Actinomyces griseus. They found that this antibiotic had relatively low toxicity and that it exerted a definite antibacterial action against most gram-positive and gram-negative organisms.

Streptomycin must be given parenterally because when it is given orally practically none of it is absorbed from the gastrointestinal tract. After one parenteral injection a high percentage of the drug is excreted in the urine within twelve hours. It produces few if any signs of toxicity, and to the present time in our experience it has caused no impairment of renal function, no damage to the hematopoietic system, no febrile reactions and no cutaneous eruptions. A few patients have noted headache, a peculiar taste in the mouth, flushing of the face and nausea after injection, but these symptoms have been of short duration. In a few cases tinnitus and vertigo have been noted and in 1 or 2 of these cases after a long period of administration of the drug ataxia also developed. Apparently, too, in a few cases signs of vestibular disturbance may develop.

In all our cases the drug was given intramuscularly every three to four hours. The usual dose has been 1 Gm. a day in divided doses. At the present time, however, it is our opinion that the proper dose is at least 3 Gm. a day for the first few days. Since most of the organisms found in the urinary tract will alter their sensitivity to streptomycin when exposed to it for a period of time, we believe that the drug should be given in large doses at the beginning if the desired effect is to be obtained.

With regard to the effects of the drug on the different organisms, we can say that in practically all instances Aerobacter aerogenes and Proteus ammoniae are destroyed rapidly. Staphylococcus aureus and the colon bacillus are eradicated in perhaps 50 per cent of cases. Results of treatment of infections caused by Str. fecalis or Pseudomonas aeruginosa have been uniformly poor. Undoubtedly, too, there is a variation in the way certain strains of the same organisms respond to the drug. In many of our cases infection has recurred after the administration of streptomycin was discontinued.

Streptomycin has not been the panacea that was anticipated, and the same general considerations which apply to the results obtained with other therapeutic agents must be kept in mind.

In collaboration with Hinshaw, Feldman and Pfeutze and with Greene we have used streptomycin in 14 cases of tuberculosis of the urinary tract. In 8 of these definite symptomatic improvement was noted. Vesical symptoms improved, pyuria was decreased and acid-fast organisms were found in stained smears of urine less and less frequently. In 2 cases the disease was arrested; this conclusion was reached because on inoculations of the urine of these patients into guinea pigs tuberculosis did not develop.

SUMMARY

Two important factors must be considered in the management of infections of the urinary tract. The first is the coexistence of other pathologic processes in the urinary tract. It was observed early that the presence of obstruction, tumor, stone or pronounced chronic inflammatory changes in the urinary tract definitely reduced the efficacy of the ketogenic diet in the eradication of urinary infection and that when none of these pathologic processes were present the results of treatment with the ketogenic diet were much better. Exactly the same observations were made when mandelic acid, the sulfonamide compounds, penicillin and streptomycin were used. The other factor is the variation in the results obtained against various strains of organisms. This definitely suggests the importance of using various therapeutic compounds in alternate courses if one or another fails to eradicate the infection. Of course it is useless to do this if coexisting pathologic conditions have not been removed first of all.

For the routine treatment of infections of the urinary tract, mandelic acid and the sulfonamide compounds are still the drugs of choice. Penicillin is a great adjunct to treatment, but it has not been the boon for which we had hoped in the ordinary case of nonspecific infection of the urinary tract. Streptomycin produces spectacular results in some cases of resistant urinary infection but cannot be used routinely at the present time. Our studies concerning this drug are incomplete because the supply has been so limited that it has been impossible to carry out the investigative work that should go along with the study of any antiseptic.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. ADCOCK AND PLUMB AND DRS. POOL AND COOK

DR. GILBERT J. THOMAS, Beverly Hills, Calif.: The paper of Drs. Cook and Pool containing data from their vast experience has brought our information up to date concerning the proper use of urinary antiseptics. The use of controls in order to evaluate the results obtained in attempts to rid organs or tissues of the human body of pathogenic bacteria is very important. Dr. Adcock's paper emphasizes the importance of carefully controlled experiments when these substances are administered. There is not at present a single drug, chemotherapeutic agent, antibiotic or method of changing the physical properties of the urine that will completely disinfect the urine. The first effective methods of disinfection of the urine changed its physical properties. Alkalinization was used against infection due to the coccus group and acidification against those due to the bacillary group. The first drug that was effective was Hexamine (methenamine). Its successful action in dealing with infection due to colon bacilli was dependent on changing the physical properties of the urine so that it became acid and the drug was thereby broken up to release formaldehyde. In addition to the liberation of formaldehyde the change in the physical properties of the urine to acid with a p_H of 5.2 or less was a major factor in controlling the continued growth of colon bacilli. Before the advent of antibiotic substances mixed infections had to be controlled by alternating the changes in the physical properties of the urine. It was acidified for ten days and then alkalinized for a like period. Hexylresorcinol in a 1:1,000 solution changed the physical properties of the urine by increasing the surface tension. These changed conditions which had to be prolonged produced a bacteriostatic action in most urines and a bactericidal action in a few. The clinicians reporting today infrequently use the term "cure." There were just 5 cures in Dr. Adcock's carefully controlled group. These occurred in bacterial infections or with types of bacteria that heretofore have been exceedingly resistant to any other method of treatment. I have had the opportunity of seeing 1 or 2 cases of urogenital tuberculosis that Drs. Green and Pool have treated with streptomycin. I have had several cases of tuberculosis but have been unable to obtain sufficient amounts of streptomycin to apply adequate treatment. One of these patients had had streptomycin daily for ninety days, receiving over 2 million units a day. His clinical symptoms were improving, the character of the urine was better and an occasional specimen contained no Mycobacterium tuberculosis. The man's general condition was improved, but he still had some frequency. Dr. Pool can tell us more about the dosage used and the 12 cases they have treated.

DR. JAMES E. POTTER, Palm Springs, Calif.: My experience with the use of penicillin has probably been the same as every other man's who had used much of it. It has been both encouraging and discouraging. I have patients come in and I think, "I can clear you up in just a few days with a few injections of penicillin." I give it, but I am disappointed. I have made the practice of running cultures, but one cannot definitely put one's finger on what organism will respond to penicillin treatment. Trial and error is the only way to find out. I give penicillin to practically every patient with urinary infection that comes into my office, and in most of them I get a very satisfactory response.

I agree with Dr. Adcock thoroughly in that the initial dose of streptomycin and also the initial dose of every other urinary antiseptic should be a maximum dose. We should not temporize. If a drug is indicated, my idea is to use it in full dosage.

DR. JOHN W. HIRSHFELD, Ithaca, N. Y.: I had the opportunty two years ago of taking part in some of the initial clinical studies of streptomycin. Experience in the treatment of surgical infections convinced me that the approach which Dr. Adcock and his co-workers have made is the only logical one. Different strains of the same organism vary enormously in their resistance to streptomycin. Therefore, unless the resistance of the organism is determined before treatment is instituted, one has no knowledge of what constitutes a dose of streptomycin which will be adequate to inhibit its growth. Streptomycin is a vulnerable antibiotic agent in that most bacteria possess the power of developing a tolerance for it rapidly. For these reasons it is foolish to undertake treatment with an inadequate dose. It is important to know before starting that a dose large enough to do the job can be given, because with streptomycin one usually has just one chance. Treatment cannot be started with a small dose and the amount then gradually increased. Although streptomycin is excreted in very high concentrations in the urine, the urinary concentration of the drug is probably not the important consideration. The source of these infections is in the tissue, not in the urine. Maintaining a high concentration in the urine and not in the tissue is like trying to irrigate an infected compound fracture wound with an antiseptic. Every one knows that it doesn't accomplish very much. It is important that streptomycin should be given in concentrations high enough to inhibit the organisms in the tissue and the concentration in the urine should probably be forgotten. None of the antibiotic agents are effective in the presence of foreign bodies, dead tissue and walled-off abscesses. Since the physician has only one chance with streptomycin, it is foolish to start therapy until abnormalities of the urinary tract which will make it subject to reinfection have been corrected surgically.

DR. RAY JONES, Seattle: There is one comment that has been missed entirely in discussion of chemotherapy in the urinary infection, namely, the development of immunity by the patient before chemotherapy is given. If the physician only waits until nature has a chance to establish a little immunity itself, before he begins chemotherapy, then the incidence of improvement will necessarily rise. If one goes into socialized medicine routines and gives everyone the same medicine immediately when the diagnosis is made one will be but practicing on the percentage of cure basis, not scientific medicine. As to the gonococcus being licked, according to the Health Department reports there has been a great increase in gonorrhea in the last six months; it is going up by leaps and bounds. The gonococcus has acquired a tolerance to sulfonamide drugs, now to penicillin, what next? However, physicians are not seeing that gonorrhea. Perhaps that is the reason we think that it is decreasing. It goes to the Health Department, where it can get treatment for nothing. Gonorrhea is completely socialized, so regardless of the financial status of the patient he can go down there and get free treatment. It has become such that we doctors who have been doing venereal disease work are getting discouraged. I am seriously thinking of retiring to the farm and raising skunks, in hopes that the government will keep its nose out of that.

DR. VICTOR LESSPINASSE, Chicago: I had a very satisfactory experience with streptomycin. A man 50 years of age had a ureteral stone which I manipulated. The next morning his temperature was up a little bit. I promptly ordered some penicillin. The following morning his temperature was up more and the third morning it reached 105 F. He was beginning to have some jaundice. The blood count revealed 3½ million red cells, and it had been 5 million in the routine blood check when he came in. The next morning his temperature was 105.5 F. and his red blood cell count was 1½ million. A culture of the urine revealed Bacillus pyocyaneus. I turned him over to Dr. Priest and the streptomycin group; they gave him streptomycin and his temperature dropped just as in Dr. Adcock's case. The fever never came back. Three weeks later his blood count gradually improved under symptomatic treatment; he still had the organisms in his urine, but he was symptom free. His blood had come back to normal. Then three weeks after that his urine culture was negative and his blood count, blood condition and general clinical condition stayed perfectly normal. That, to me, was a beautiful demonstration of the power of streptomycin. Personally, I have had very little experience with B. pyocyaneus. I always thought it was just a saprophyte and had no great pathologic significance, but I find now that at times it is quite a powerful pathogenic organism.

The Conservation of Energy.—In the 1840's Mayer and Helmholtz in Germany, Colding in Denmark and Joule in England independently arrived at the principle of the conservation of energy. The first to formulate this principle, Robert Mayer, was led to his discovery by a biological observation. When serving as a ship's doctor he noticed at the harbor of Surabaya in 1840 that the venous blood of the Javanese was almost as bright red as the arterial blood. This, he assumed, was because a smaller amount of oxidation is required to maintain the body temperature in the tropics than in colder climates. Two years later he announced the law of the conservation of energy, but he had great difficulty in getting his paper published and did not live to see his ideas accepted. The principle of the conservation of energy claims that in all the changes which occur in nature there is something that remains constant, the energy. If energy of one kind disappears an equivalent amount of other forms of energy makes its appearance.—Nielsen, J. Rud: Atomic and Molecular Energies, *Scient. Monthly*, December 1946.

EXUDATIVE TONSILLITIS AND PHARYNGITIS OF UNKNOWN CAUSE

COMMISSION ON ACUTE RESPIRATORY DISEASES
Fort Bragg, N. C.

The assumption is made commonly that the exudative type of tonsillitis and pharyngitis is caused by beta hemolytic streptococci. While this statement is true in many instances, it is by no means universally true. In various studies of respiratory disease, comment has been made on the occurrence of cases of exudative tonsillitis and pharyngitis not due to hemolytic streptococci.[1] Similarly, during three years of observation of soldiers with acute respiratory disease at the Regional Hospital, Fort Bragg, many instances of exudative tonsillitis and pharyngitis were encountered in which beta hemolytic streptococci could not be incriminated as the causative agent. Indeed, in these studies it was demonstrated that about half of all cases of exudative tonsillitis and pharyngitis had neither bacteriologic nor serologic evidence of streptococcic infection.

The clinical characteristics and laboratory findings of streptococcic and nonstreptococcic forms of exudative tonsillitis and pharyngitis and the criteria by which the two conditions may be distinguished have been presented in several previous studies.[2] The purpose of this report is to summarize some of these data and to describe, by illustrative case reports, some of the features of exudative tonsillitis and pharyngitis of unknown cause.

METHODS

The clinical, bacteriologic and serologic methods used in these studies have been described.[2a] The studies were carried out during the spring of 1943, the spring of 1944 and the winter of 1945. Most of the patients were Army recruits hospitalized for respiratory disease. Daily examinations were made of the patients during their hospital stay. Throat cultures were taken on three consecutive days and examined by the usual cultural methods for beta hemolytic streptococci and other aerobic flora. Serologic identification of beta hemolytic streptococci according to group [3] and type [4] was made.[5] Antistreptolysin [6] and antifibrinolysin [7] tests were carried out with acute phase and convalescent phase serums, obtained three to eight weeks after the onset of illness, in all subjects.

RESULTS

A comparison of some clinical features of streptococcic and nonstreptococcic exudative tonsillitis and pharyngitis is shown in charts 1 and 2. These results are based on an analysis of 54 cases of exudative tonsillitis and pharyngitis in which both bacteriologic and serologic observations indicated that the beta hemolytic streptococcus was the causative agent and 125 cases in which similar procedures did not yield evidence of infection with this organism.

Inspection of chart 1 reveals that streptococcic infections of the throat have a more acute onset than do nonstreptococcic infections. Such symptoms as chilliness, feverishness, headache and malaise, which indicate a systemic reaction, are also more common in the former group, but the difference is slight. In contrast, the nonstreptococcic cases tend to involve the lower portions of the respiratory tract more frequently as witnessed by their greater incidence of hoarseness, sputum, cough and pain in the chest. The frequency of pain on swallowing (sore throat) is approximately the same in the two groups. In the aggregate, differences between the clinical pattern of the two types of exudative tonsillitis and pharyngitis are evident. Obviously, however, such differences are of little help in the differential diagnosis of a particular case.

The physical examination yields data more helpful in differential diagnosis. Chart 2 reveals that abnormal physical conditions are considerably more frequent in cases of streptococcic than in those of nonstreptococcic origin. Patients in the streptococcic group give the general appearance of a more severe illness; they frequently exhibit diffuse redness of the mucous membranes of the palate, tonsils and posterior pharygeal wall, and in the majority of them some degree of edema of these tissues is evident. The presence of enlarged and tender lymph nodes is of considerable differential value. All these observations are less common in nonstreptococcic exudative tonsillitis and pharyngitis. Again, however, these are aggregate observations and in individual cases considerable variation from the average has been encountered.

The total and differential leukocyte counts are of real value in diagnosis. The average total leukocyte count in streptococcic tonsillitis and pharyngitis was 13,427, with 79 per cent polymorphonuclear leukocytes, and in the nonstreptococcic cases 9,024, with 67 per cent polymorphonuclear leukocytes.

Although both diseases are of short duration, with fever generally less than four days, the maximum temperature in streptococcic infections tends to be slightly higher than that in nonstreptococcic infections, averaging 102.5 F. in the former and 101.7 F. in the latter.

The extent and appearance of the exudate in the throat is, in general, different for the two varieties of

---

The Commission on Acute Respiratory Diseases is now located in the Department of Preventive Medicine, Western Reserve University School of Medicine, Cleveland.

This investigation was supported in part through the Commission on Acute Respiratory Diseases, Board for the Investigation and Control of Influenza and Other Epidemic Diseases in the Army, Preventive Medicine Service, Office of the Surgeon General, United States Army, and by grants from the Commonwealth Fund, the W. K. Kellogg Foundation, the John and Mary R. Markle Foundation and the International Health Division of the Rockefeller Foundation to the Board for the Investigation and Control of Influenza and Other Epidemic Diseases for the Commission on Acute Respiratory Diseases.

Members and professional associates of the Commission on Acute Respiratory Diseases are John H. Dingle, Major, M. C., A. U. S., Director; Theodore J. Abernethy, Major, M. C., A. U. S.; George F. Badger, Major, M. C., A. U. S.; J. W. Beard, M.D.; Norman L. Cressy, Major, M. C., A. U. S.; A. E. Feller, M.D.; Irving Gordon, M.D.; Alexander D. Langmuir, Major, M. C., A. U. S.; Charles H. Rammelkamp, M.D.; Elias Strauss, Major, M. C., A. U. S.

[1] Stuart-Harris, C. H.; Andrewes, C. H.; Smith, W.; Chalmers, D. K. M.; Cowen, E. G. H., and Hughes, D. L.: A Study of Epidemic Influenza with Special Reference to the 1936-37 Epidemic, Medical Research Council, Special Report Series, no. 228, London, His Majesty's Stationery Office, 1938. Frances, T., Jr.: Epidemic Influenza: Studies in Clinical Epidemiology, Ann. Int. Med. **13**: 915-922 (Dec.) 1939.

[2] (*a*) Commission on Acute Respiratory Diseases: Endemic Exudative Pharyngitis and Tonsillitis, J. A. M. A. **125**: 1163-1169 (Aug. 26) 1944; (*b*) Role of β-Hemolytic Streptococci in Common Respiratory Disease, Am. J. Pub. Health **35**: 675-682 (July) 1945; (*c*) unpublished data.

[3] Fuller, A. T.: Formamide Method for Extraction of Polysaccharides from Haemolytic Streptococci, Brit. J. Exper. Path. **19**: 130-139 (April) 1938.

[4] Swift, H. F.; Wilson, A. T., and Lancefield, R. C.: Typing Group A Hemolytic Streptococci by M Precipitin Reaction in Capillary Pipettes, J. Exper. Med. **78**: 127-133 (Aug.) 1943.

[5] Generous supplies of streptococcus typing serums were made available through the courtesy of Dr. H. F. Swift, Dr. R. C. Lancefield and Dr. C. S. Keefer, Director, Commission on Streptococcal Infections, Army Epidemiological Board.

[6] Hodge, B. E., and Swift, H. F.: Varying Hemolytic and Constant Combining Capacity of Streptolysins: Influence on Testing for Antistreptolysins, J. Exper. Med. **58**: 277-287 (Sept.) 1933.

[7] Kaplan, M. H., in collaboration with the Commission on Acute Respiratory Diseases: Studies of Streptococcal Fibrinolysis: III. A Quantitative Method for the Estimation of Serum Antifibrinolysin, J. Clin. Investigation **25**: 347-351 (May) 1946.

tonsillitis and pharyngitis. When caused by streptococci, the exudate is usually yellow and large in extent; not infrequently it is confluent in one or more areas. Nonstreptococcic exudate, in contrast, is often white or gray, pinhead size, and is frequently distributed over enlarged follicles of lymphoid tissues on the posterior pharyngeal wall. Although both types of exudate are more commonly found in subjects with large tonsils, the gray, pinhead variety is seen more frequently than the confluent type in subjects who have had a tonsillectomy and exhibit either clean tonsillar fossae or tonsillar tags.

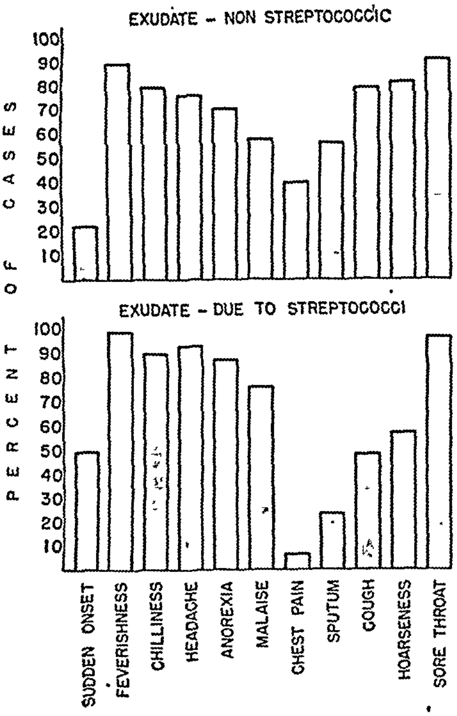


Chart 1.—Frequency of various symptoms in 125 cases of exudative tonsillitis and pharyngitis of nonstreptococcic (unknown) origin (upper half) and 54 cases of exudative tonsillitis and pharyngitis due to beta hemolytic streptococci (lower half).

Streptococcic infections of the throat, therefore, generally have an acute onset with sore throat and systemic symptoms, a short illness with fever which may be high but does not persist for more than four days, diffuse redness and edema of the mucous membranes of the oropharynx, a discrete or confluent exudate, usually on the tonsils, enlarged and tender cervical lymph nodes and a moderate leukocytosis. Nonstreptococcic exudative tonsillitis and pharyngitis is generally a milder disease. The onset is more gradual, and sore throat and constitutional symptoms predominate at onset, but, later, involvement of the lower portions of the respiratory tract develops. Fever also is not often longer than four days in duration, but the height of the fever is lower than in streptococcic cases. Redness and edema of the mucous membranes is less decided and may be absent. The exudate is less extensive, often pinpoint, and is frequently confined to the posterior pharyngeal wall rather than the faucial tonsillar tissue. Cervical lymphadenopathy is not prominent, and the total leukocyte count is either normal or but slightly elevated.

REPORT OF CASES

The following case reports have been selected to illustrate the typical pictures of the nonstreptococcic and streptococcic forms of exudative tonsillitis and pharyngitis and to indicate the variations from the usual which have been encountered. None of the subjects included had clinical or roentgenographic evidence of pulmonary involvement. Unless indicated, specific chemotherapy was not used.

CASE 1.—This patient was studied during two hospital admissions for exudative tonsillitis and pharyngitis. He was admitted for the first time during an explosive epidemic of septic sore throat due to beta hemolytic streptococcus of group A, type 5.[8] During this illness, however, he was found to have nonstreptococcic exudative tonsillitis. Although his illness was mild, there were also a number of proved type 5 streptococcic infections among other members of his organization which, in appearance, were similar to the present case. A month after the initial illness the patient again had exudative tonsillitis and on this occasion had an infection due to the epidemic strain of type 5 streptococcus. The contrast between the data on the two admissions is illustrated in chart 3.

First Admission.—A white soldier aged 18 was hospitalized Nov. 20, 1943 because of sore throat and hoarseness for one day. He had no constitutional symptoms. The admission temperature was 99.6 F., and he appeared only mildly ill. The tonsils were extremely large but only slightly injected, and the oropharyngeal mucosa did not appear edematous. There were scattered discrete spots of white exudate on both tonsils. The anterior cervical lymph nodes were moderately enlarged but only slightly tender.

Without specific medication, he improved rapidly. The exudate disappeared in the course of six days and both the tonsils and the cervical lymph nodes decreased in size. The leukocyte count was slightly elevated on admission but normal thereafter. Nine throat cultures did not yield beta hemolytic streptococci, and streptococcus antibodies did not develop during three weeks of observation.

Second Admission.—The patient was readmitted Dec. 20, 1943 because of headache, dizziness, fever, chilliness and aching in the back for one day. He did not complain of sore throat until the third day of illness. On this admission he appeared acutely ill and had a temperature of 104 F., a flushed face, injected eyes and a rapid pulse rate. The tonsils were enormous, nearly meeting in the midline, and were edematous and diffusely

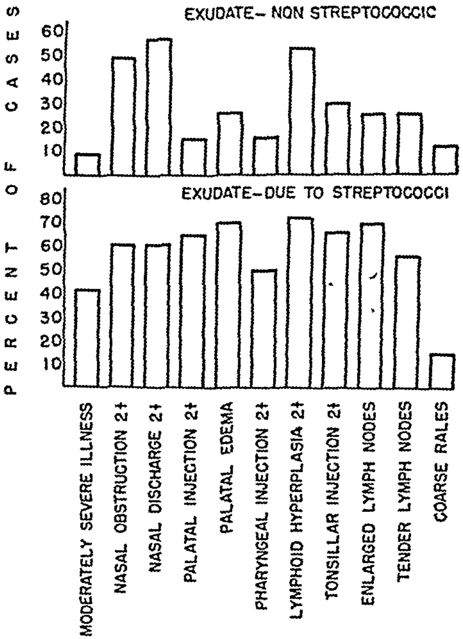


Chart 2.—Frequency of various abnormal physical findings during hospital course. Same groups of cases as in chart 1. The symbol 2+ indicates diffuse or severe involvement.

---

[8] Commission on Acute Respiratory Diseases: A Study of a Food-Borne Epidemic of Tonsillitis and Pharyngitis Due to β-Hemolytic Streptococcus, Type 5, Bull. Johns Hopkins Hosp. 77: 143-210 (Sept.) 1945.

injected. There were numerous large flat patches of yellow exudate on both tonsils. The uvula was edematous. The anterior cervical lymph nodes were enlarged and tender.

Fever persisted for eight days. Again without specific medication, the tonsils decreased in size and regained their normal color, and the edema of the soft palate disappeared. The exudate cleared from the tonsils over the course of a week. The size of the lymph nodes in the neck decreased, and the tenderness to palpation disappeared. The total leukocyte count was 17,300, with 79 per cent polymorphonuclear leukocytes. A predominant growth of beta hemolytic streptococci of group A, type 5, was recovered repeatedly from throat cultures. During convalescence from this illness streptococcus antibodies (antistreptolysin and *antifibrinolysin) were demonstrated in the patient's blood.*

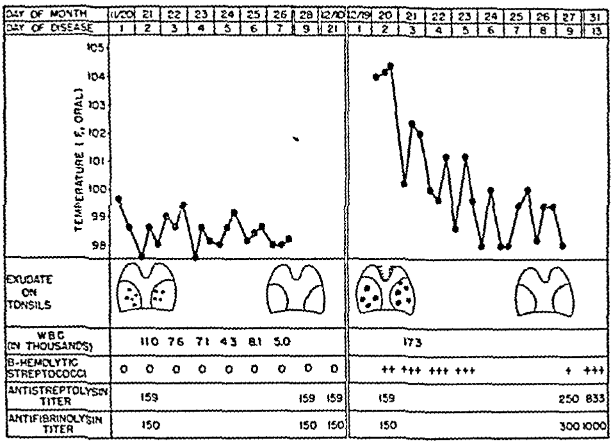


Chart 3. (case 1).—Temperature graphs and clinical and laboratory data on two hospital admissions, the first for nonstreptococcic exudative tonsillitis and the second for exudative tonsillitis due to beta hemolytic streptococci.

In this and the following figures, the appearance of the throat is depicted diagrammatically to indicate the size of the tonsils or tonsillar remnants, the presence of hypertrophied lymphoid follicles, the extent of exudate and the presence and degree of edema of the soft palate. A semiquantitative measure of the number of beta hemolytic streptococci in throat cultures is indicated by plus marks, +++ and ++++ being predominant growths of these organisms on blood agar plates. The titers of antistreptolysin and antifibrinolysin are indicated in units.

This patient was unique in that he experienced a mild illness due to nonstreptococcic exudative tonsillitis followed within a month by a severe attack of streptococcic tonsillitis. The first attack was characterized by little fever, few constitutional symptoms, moderate amounts of exudate with few signs of inflammation of the pharyngeal mucosa and a normal to slightly elevated leukocyte count. The second illness was marked by prostration, high fever, considerable swelling and redness of the tissues of the throat, enlargement and tenderness of the cervical lymph nodes and brisk leukocytosis. In this instance, therefore, clinical differentiation between the two diseases should not have been difficult.

In contrast, the records of 2 patients in whom clinical differentiation could not be made are illustrated in chart 4.

Case 2 (Chart 4, J. M.).—An 18 year old soldier was hospitalized May 8, 1943 because of fever, chilliness, malaise and sore throat which began the preceding evening. He appeared moderately ill, had a flushed face and had a temperature of 102 F. The tonsils had been removed cleanly. On the posterior pharyngeal wall were a number of large lymphoid follicles, which were pink in color but not diffusely injected. Surmounting these follicles were many pinpoint flecks of yellow exudate. The rest of the throat appeared normal. The cervical lymph nodes were not enlarged or tender. In the course of two days, the exudate disappeared and the lymphoid follicles decreased somewhat in size but remained large. Systemic symptoms were present only on the first two days of illness. Soreness of the throat persisted for four days; cough or hoarseness were not present. The leukocyte count was elevated to 17,100, with 79 per cent polymorphonuclear leukocytes. Beta hemolytic streptococci of group A, type 3, were present in predominance in throat cultures, and streptococcus antibodies (antistreptolysin) developed during convalescence.

Case 3 (Chart 4, R. G.).—This 18 year old soldier was admitted to the hospital May 7, 1943 after twenty-four hours of sore throat, feverishness, headache and cough. Although the temperature was 102 F. he appeared only mildly ill. The tonsils had been removed cleanly. On the posterior pharyngeal wall there were a number of large follicles of lymphoid tissue, moderately injected and red, on which were scattered pinpoint spots of yellow exudate. There was also slight edema of the soft palate. The cervical lymph nodes were not enlarged or tender. The exudate disappeared in the course of four days, as did the signs of inflammation and swelling of the tissues of the throat. The fever and systemic symptoms were present for four days, but sore throat and cough persisted for a few more days, and hoarseness developed later in the illness. The leukocyte count was normal. Bacteriologic and serologic studies yielded no evidence of a streptococcic infection.

These 2 patients were hospitalized within a day of each other and were seen by the same examiner, who noted, at the time, the similarity in appearance of the throat in the two cases. Clinically, the only clue to the correct diagnosis was the leukocyte count, which was *elevated in the streptococcic case and normal in the* nonstreptococcic case. In subjects whose tonsils have been removed, hypertrophied islands of lymphoid tissue on the pharyngeal wall are frequently the site of inflammation and exudate in the presence of infections which ordinarily involve the faucial tonsils.

The following 3 case reports (chart 5) illustrate the usual pattern of illness and appearance of the throat in cases of exudative tonsillitis and pharyngitis of unknown cause.

Case 4 (Chart 5, I. Y.).—This soldier noted a sore throat and cough on the evening of March 24, 1944. The next day he felt feverish and chilly, complained of nasal obstruction and aching muscles and lost his appetite. He appeared only mildly ill, although the temperature rose to 103.4 F. on the day of admission. The tonsils had been removed, but small tonsillar tags were present. They were only slightly reddened and contained no exudate. On the posterior pharyngeal wall were a number of large lymphoid follicles which were diffusely red, and on some of them were discrete spots of gray exudate. On the second hospital day the exudate was more extensive but was still

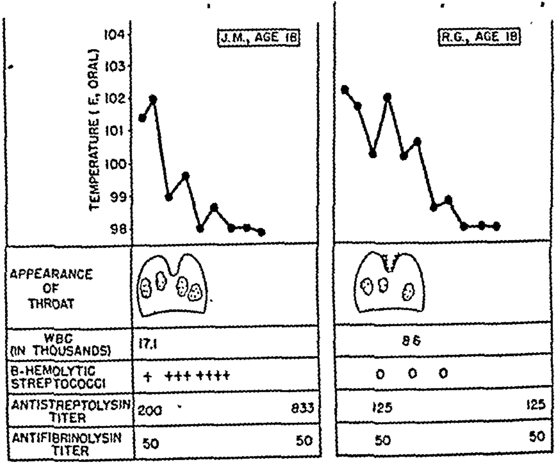


Chart 4.—Comparison of clinical and laboratory features of 2 cases of exudative pharyngitis, one due to beta hemolytic streptococci (case 2, J. M.) and the other of unknown cause (case 3, R. G.).

confined to the summits of the red lymph follicles. The cervical lymph nodes were neither enlarged nor tender. There was moderate nasal obstruction and discharge.

The temperature fell to normal by the fifth day of illness, at which time the signs of inflammation in the throat had also disappeared. However, sore throat and cough persisted for several more days, and, in addition, in the latter part of the illness hoarseness, sputum and thoracic pain associated with coughing were present.

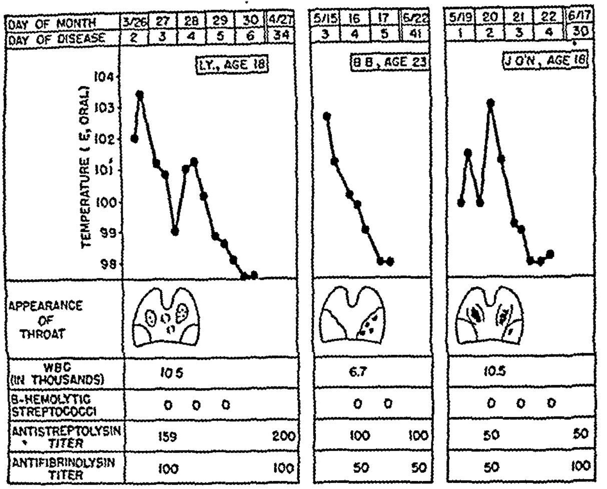


Chart 5.—Clinical and laboratory features in 3 cases of nonstreptococcic exudative tonsillitis and pharyngitis: case 4, I. Y., case 5, B. B., and case 6, J. O'N.

CASE 5 (Chart 5, B. B.).—A 23 year old soldier had a chill on May 13, 1944 followed by fever, headache, loss of appetite and sore throat, which persisted until he was hospitalized two days later. He appeared only mildly ill despite a temperature of 102.6 F. The tonsils, which were of moderate size, were diffusely injected with some evident swelling of the mucosa. There were discrete spots of exudate on the left tonsil. The soft palate appeared normal, and the posterior pharyngeal wall revealed only a few small reddened lymphoid follicles.

The temperature fell rapidly to normal on the second hospital day. The exudate also disappeared rapidly, and the tonsils decreased in size. The cervical lymph nodes were tender to palpation for a day but were not enlarged. Cough, hoarseness, sputum or pleural pain were not present.

CASE 6 (Chart 5, J. O'N.).—This soldier was hospitalized on May 19, 1944 twenty-four hours after the onset of sore throat and cough accompanied with fever, chilliness, headache and nasal stuffiness. He appeared to be mildly ill. The tonsils had been removed but small tags remained; they were only slightly injected and had a small amount of exudate. On the pharyngeal wall, near the posterior tonsillar pillars, were areas of large reddened lymphoid tissue in the form of bands. These were studded with white exudate. The cervical lymph nodes were not palpable or tender.

The temperature rose to 103 F. on the second day but was normal on the third day. The local evidences of inflammation in the throat and the systemic symptoms both disappeared as the temperature returned to normal, but sore throat and cough persisted for a day longer.

Bacteriologic and serologic studies did not yield evidence of hemolytic streptococcic infection in these 3 cases. The slight increase during convalescence in the antistreptolysin titer in case 4 and in the antifibrinolysin titer in case 6 were not regarded as significant. The leukocyte counts were either normal or only slightly elevated, and the per cent of polymorphonuclear leukocytes was normal. The exudate was not confluent. In 1 case it was confined to lymphoid follicles on the posterior pharyngeal wall, in another it was on the tonsils and in the third it was present both on tonsillar tags and on bands of lymphoid tissue on the pharyngeal wall. Enlargement of the cervical lymph nodes was not present. The course of illness was brief. In some of the patients the presence of cough, hoarseness, sputum, pleural pain and nasal symptoms indicated involvement of more than the oropharynx alone. None of these cases resembled a "typical" streptococcus sore throat.

The following case is one in which clinical differentiation between streptococcic and nonstreptococcic exudative tonsillitis was more difficult.

CASE 7 (Chart 6, E. H.).—A 20 year old soldier awoke June 9, 1943 with a sore throat, which resulted in considerable difficulty and pain in swallowing. He also noted cough and hoarseness and later became feverish and chilly, and a headache developed. On admission to the hospital the next day, he appeared to be moderately to acutely ill with a temperature of 102 F. The soft palate was edematous and the uvula resembled a distended bag of fluid. Both tonsils were covered with an exudate which was confluent on one side and discrete on the other. The mucous membrane, however, was not unusually injected. The anterior cervical lymph nodes were enlarged but not tender.

During the next four days the edema of the palate disappeared and the exudate cleared from the tonsils, but the latter did not regress in size. The cervical lymph nodes did decrease in size under observation. Fever and systemic symptoms disappeared on the fifth day of illness; sore throat, cough and hoarseness persisted for several more days.

The leukocyte count was moderately elevated. No evidence of beta hemolytic streptococcic infection was obtained from bacteriologic or serologic studies.

Although this was an instance of nonstreptococcic exudative tonsillitis, some of the features of the illness were those commonly found in streptococcic infections; these included decided edema of the uvula, confluent exudate on the tonsils and enlarged cervical lymph nodes. The correct diagnosis was entirely dependent on the laboratory tests.

The following case of nonstreptococcic exudative tonsillitis illustrates a commonly encountered pattern, in which the symptoms and course of illness resemble undifferentiated acute disease of the respiratory tract.[2c]

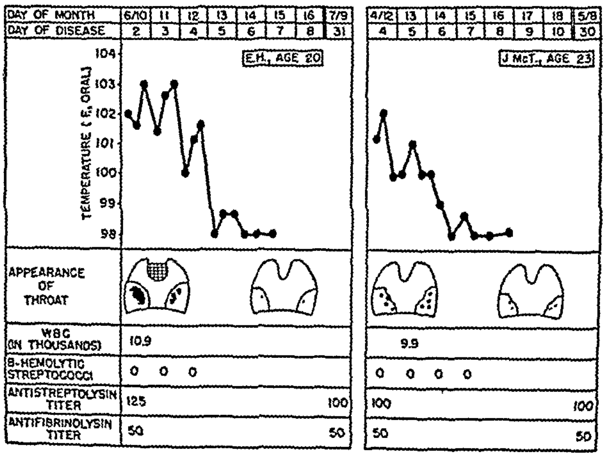


Chart 6.—Contrasting observations in 2 cases of exudative tonsillitis and pharyngitis of unknown origin: case 7, E. H., and case 8, J. McT.

CASE 8 (Chart 6, J. McT.).—A 23 year old soldier was ill for four days before admission to the hospital. The illness began gradually with cough, accompanied by substernal and costal aching. The next day there was generalized muscular aching, loss of appetite and later, fever, chilliness and headache. Sore throat and hoarseness developed shortly before hospitalization.

On admission the patient appeared only mildly ill and had a temperature of 101.2 F. The tonsils were enlarged, and on their surface were numerous discrete spots of exudate. The palate and posterior pharynx were entirely normal. The cervical lymph nodes were enlarged and tender.

The temperature fell to normal after three days in the hospital; systemic symptoms subsided with the fever. Sore throat, cough and hoarseness, however, persisted for several days more. The tonsils and the cervical lymph nodes decreased in size under observation. The bacteriologic and serologic data eliminated the possibility of streptococcic infection.

The gradual onset of symptoms and the prominence of cough, hoarseness and thoracic pain were features which are not unlike those found in undifferentiated acute disease of the respiratory system. Sore throat is also frequent in the latter condition. The development and pattern of the symptoms and the appearance of the throat were quite different from those characteristic of streptococcic infection.

The next case is an example of an unusually prolonged febrile illness associated with nonstreptococcic exudative tonsillitis.

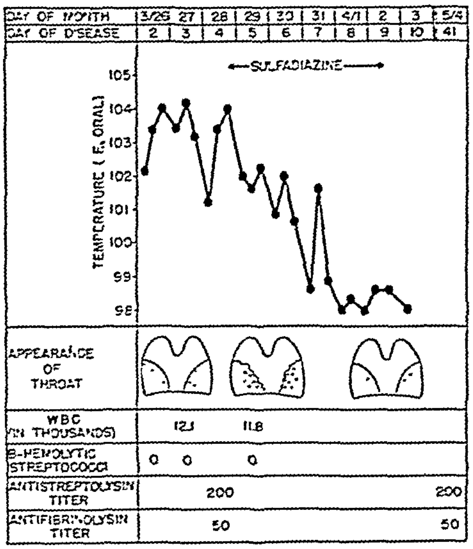


Chart 7. (case 9)—Exudative tonsillitis and pharyngitis of unknown origin with unusually high fever and prolonged course.

Case 9 (Chart 7).—An 18 year old soldier became feverish on the evening of March 27, 1944. The next day he continued to feel feverish, lost his appetite and had a sore throat and headache.

The temperature on admission was 102.2 F. The only abnormal physical observations were in the throat. The tonsils were not large but were diffusely red, and there were scattered small spots of gray-white exudate on them. The posterior pharyngeal mucosa was also injected, but the soft palate was normal. The next day the tonsillar exudate was more extensive, and the individual spots were larger. Over the course of the following week the exudate and redness of the mucous membranes gradually disappeared. The tonsils did not change in size. The anterior cervical lymph nodes were not enlarged during the illness and were tender to palpation on only one day.

The temperature was elevated to 104 F. for three days and did not regain the normal level until the eighth day after the onset of illness. During the febrile period systemic symptoms, sore throat, cough, hoarseness and substernal and costal aching were present. Because of continued fever sulfadiazine was administered (6 Gm. per day) for five days. During this period the temperature returned to normal; whether or not chemotherapy was responsible for this cannot be determined. The total leukocyte count was moderately elevated, but the percentage of polymorphonuclear cells was not abnormal. Laboratory studies eliminated the possibility of streptococcic disease.

This case illustrates that nonstreptococcic exudative tonsillitis may be associated with a considerable degree and duration of fever. In this instance, the severity and extent of the local inflammatory reaction in the throat did not seem adequate to account for the systemic reaction.

COMMENT

Greater recognition should be given to the fact that all cases of exudative tonsillitis and pharyngitis are not due to hemolytic streptococci. At this post, among recruits, less than half of such cases were proved to be of streptococcic origin. In general the distinction between cases of streptococcic and nonstreptococcic origin can ordinarily be made on clinical grounds, using as criteria the height of fever, the leukocyte count, enlargement and tenderness of the cervical lymph nodes, redness and edema of the mucous membranes and the extent and character of the exudate. Such criteria, however, are not infallible, and, as illustrated in some of the preceding case reports, may sometimes lead the examiner into error. For accurate diagnosis, cultural and serologic methods must be employed. These are particularly important in view of the fact that nonstreptococcic exudative tonsillitis and pharyngitis of the type described is a benign disease without recognized complications, whereas streptococcic infections of the throat may result in serious and crippling sequelae. Intelligent management of the cases, therefore, requires cultural and serologic confirmation of the diagnosis.

Results of bacteriologic tests alone may not be adequate for diagnosis. Many subjects, both normal and with respiratory disease, harbor hemolytic streptococci in the throat but do not exhibit streptococcus antibodies.[2b, c] Throat cultures taken from such carriers of streptococci usually reveal only a small number of these organisms. In contrast, cases of true streptococcic infection, in which an antibody response can be demonstrated in convalescence, frequently yield a predominant growth of hemolytic streptococci in throat cultures.[2a]

The cause of the type of exudative tonsillitis and pharyngitis herein described is unknown. Streptococcic infection can be ruled out with assurance on the basis of (1) multiple throat cultures yielding no hemolytic streptococci and (2) failure to demonstrate serum antibodies to hemolytic streptococci. The throat cultures made in these studies were also examined for other common aerobic organisms including pneumococci, staphylococci, Hemophilus influenzae, Klebsiella pneumoniae and Hemophilus hemolyticus. The frequency of occurrence of these organisms was the same in this group of cases as it was in well soldiers and in cases of undifferentiated acute respiratory disease.[2c] Serums from a sample of these cases were tested for the presence of type-specific pneumococcic agglutinins. Specific agglutinins of diagnostic significance were not found.[2a] Recently, in a few cases serum antibodies to H. hemolyticus have been demonstrated.[9] The etiologic significance of this observation is as yet unknown. At any rate, it does not appear that H. hemolyticus is the causative agent of infection in more than a small percentage of the cases, nor does it seem likely that any single bacterial agent can be incriminated as the cause of the majority of the infections. Presumably the disease is of nonbacterial origin.

---

[9] Mickle, W. A., in collaboration with the Commission on Acute Respiratory Diseases: unpublished data.

Nonstreptococcic exudative tonsillitis and pharyngitis has occurred in close epidemiologic relation to epidemics of undifferentiated acute respiratory disease among recruits at Fort Bragg. The cases have been widely distributed without evidence of focal concentration in small population units. Instances of the concurrence of exudative tonsillitis and pharyngitis and primary atypical pneumonia have also been found.[10] Others have previously reported an epidemiologic relationship between undifferentiated acute respiratory disease and nonstreptococcic exudative tonsillitis and pharyngitis.[1] Moreover there is a considerable degree of similarity in the clinical pattern of these conditions, when exception is made of those symptoms and physical signs which are related to the local inflammation in the throat. The leukocyte counts and the bacteriologic and serologic data in both conditions are not indicative of bacterial infection. It is suggested, therefore, that nonstreptococcic exudative tonsillitis and pharyngitis may be a variant of epidemic undifferentiated acute respiratory disease. Such a supposition would harmonize some conflicting opinions in regard to the relative incidence of exudative tonsillitis and pharyngitis of streptococcic and unknown origin in different geographic areas and among different military populations. At this post, streptococcic infections have been infrequent, and carrier surveys have indicated a low prevalence of hemolytic streptococci,[2b, c] while undifferentiated acute respiratory disease has been the chief cause of respiratory admissions.[11] Under these conditions exudative tonsillitis and pharyngitis of unknown cause have been more commonly seen than have true streptococcic infections among recruits. Conversely, in areas where hemolytic streptococcic carrier rates are high, and the military population is made up of seasoned troops, undifferentiated acute respiratory disease may be less frequent and streptococcic infections of the throat may occur more commonly than exudative tonsillitis and pharyngitis of unknown cause.[12]

From the present experience, no statement can be made as to the frequency of occurrence in civilian practice of exudative tonsillitis and pharyngitis of unknown cause. Because of its generally mild character, short course and freedom from complications, the suggestion may be advanced that it should be sought for among patients treated at home rather than in the hospital.

SUMMARY

Exudative tonsillitis and pharyngitis of unknown origin should be differentiated from streptococcic infections of the throat. The clinical differentiation can be made with reasonable accuracy in many cases but not in all. Accurate diagnosis demands the use of cultural and serologic methods. The salient features of these two types of exudative tonsillitis and pharyngitis have been presented, and cases have been reported to illustrate the variations in appearance and the difficulties in diagnosis.

---

[10] Commission on Acute Respiratory Diseases: Association of Acute Pulmonary Lesions with Infections of the Throat, Ann. Int. Med. 25: 473-487 (Sept.) 1946.

[11] Commission on Acute Respiratory Diseases: Acute Respiratory Disease Among New Recruits, Am. J. Pub. Health 36: 439-450 (May) 1946.

[12] Rantz, L. A.; Rantz, H. H.; Boisvert, P. J., and Spink, W. W.: Streptococcic and Nonstreptococcic Disease of the Respiratory Tract, Arch. Int. Med. 77: 121-131 (Feb.) 1946.

RADIATION THERAPY OF UTERINE MYOMA

Critical Analysis of Results in Five Hundred Cases, Showing Indications and Limitations

ROBERT J. CROSSEN, M.D.
and
HARRY S. CROSSEN, M.D.
St. Louis

Some myomatous uteri cause no trouble and require no treatment. When there is undue bleeding, it may often be controlled by medication or by medication plus curettage. In cases which require more radical measures surgical removal is the treatment of choice in younger women and is also necessary for some myomas in older women. However, the use of radiation therapy in certain selected cases of the latter group has taken care of the myoma in many instances, without subjecting the patient to the risks of the major surgical operation of hysterectomy.

This study of our experiences in handling selected cases of myoma by radiation therapy (with curettage to exclude cancer and conization to remove chronic cervicitis) was undertaken to determine definitely the immediate and remote results of such treatment and to ascertain by a critical survey of results thus far attained if any modifications of our treatment plans were indicated. Selection of treatment in the various types of myoma depends not only on the long-recognized factors but also on the advances in knowledge which are made from time to time. One of these more recently recognized factors is the menace of silent carcinoma of the involuting ovary. Consequently it is important to determine in how many of these patients there developed ovarian cancer which would have been prevented by hysterectomy (provided the surgical procedure included bilateral complete oophorectomy, as it ordinarily should in climacteric patients). Also, does the radiation therapy, which stops myomatous activity and bleeding, shorten the period of erratic ovarian activity sufficiently to lessen the possibility that ovarian cancer will develop? Does the intrauterine radiation lessen the incidence of subsequent endometrial cancer? Does the conization remove the chronic irritation in the cervix sufficiently to give reasonable safety from cancer of the cervix?

The typical case for treatment by radiation is the medium-sized (fist-sized) myomatous uterus in a patient of climacteric age with bleeding as the principal symptom and with the pelvis otherwise clear. In the management of our cases individual contraindications to abdominal operation caused gradual enlargement of the radiation field in various directions—namely, in regard to the size of the growth, the type of pain associated with it and complicating adnexal inflammation. We advanced cautiously from radiation of fist-sized to larger growths and came later to include those grapefruit-sized (half way to the umbilicus). Even larger growths (up to the umbilicus) were treated by radiation to stop bleeding temporarily till the patient could be built up for abdominal operation. In some of these cases in which the tumor was exceedingly large the cessation of bleeding and the general improvement, with later relief of pressure symptoms, were so pronounced that surgical removal of the growth became unnecessary.

Read before the Section on Obstetrics and Gynecology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

As we begin consideration of this series of 549 cases of myoma selected for radiation therapy, a striking fact which emerges at once is that in 23 cases of myomatous patients the primary curettage revealed complicating carcinoma of the endometrium. This emphasizes the danger of treating an evident myoma with roentgen therapy or otherwise before ascertaining what complications may be present. This applies to treatment by hysterectomy as well as by radiation. We have been called in consultation to determine what should be done when, after supravaginal hysterectomy for "simple fibroid," complicating endometrial carcinoma was revealed by the routine pathologic report which was received some days later. This serious and trying dilemma would have been avoided if the surgeon had made a preliminary curettage or had decided beforehand to perform complete hysterectomy and bilateral oophorectomy.

TABLE 1—*Results in Five Hundred and Twenty-Six Cases of Myoma Treated by Radiation*

	Per Cent
Successful in stopping myomatous activity and associated symptoms	90
Direct failures; failed to stop myomatous activity and associated symptoms	7
Indirect failures, stopped myomatous activity, but surgical operation was needed later for some incidental development which would have been prevented by primary operation	3

TABLE 2—*Causes of Failures*

Type of Failure	Special Conditions Responsible			
Direct				21
In myoma			9	
	Submucous	4		
	Degeneration	4		
	Adenomyoma	1		
In uterus			4	
	Primary atresia and pyometra and metritis	1		
	Subsequent stenosis and pyometra and metritis	2		
	Beginning cancer inside cervix, missed in examination	1		
In adnexa			8	
	Chronic salpingitis	5		
	Endometriosis	2		
	Cancer of ovary	1		
Indirect				15
In uterus			6	
	Degeneration in myoma	2		
	Cancer of endometrium	4		
In adjacent structures			9	
	Simple cyst of ovary	2		
	Cancer of ovary	1		
	Appendicitis	6		

RESULTS

After we subtract the 23 cases in which complicating endometrial cancer was found at primary curettage and additional measures were instituted accordingly, we have left 526 cases in which radiation of the myoma was given a trial.

The term "radiation" as here used means the usual radiation dosage for stopping myomatous activity and all bleeding, including menstrual. This subject is large and ramified, and it seems inadvisable to complicate the discussion by adding the conservative use of radiation for bleeding in young patients who happen to have myoma. All 526 patients received the full myoma radiation dose. In nearly all cases the radiation was given as an intrauterine radium treatment in conjunction with the other uterine work and pelvic investigation. The exceptional instances in which roentgen therapy was employed were principally cases in which simple curettage had proved insufficient to stop the bleeding and roentgen therapy had been undertaken soon after, or those in which after a moderate radium dose some supplementary radiation was needed later.

In general the results have been very gratifying. We have been greatly pleased at the large proportion of patients who obtained complete and permanent relief. In exceptional cases in which myomatous activity or troublesome associated symptoms persisted, the necessary additional measures were employed. The statistical results are shown in table 1.

FAILURES

Of the 526 cases in which myoma radiation was given a trial, 21 were flat failures—that is, surgical intervention was later required for disturbances due to conditions presumably existent at the time of primary treatment, and which we hoped to take care of by the radiation. There were also 15 cases in which the radiation stopped the myomatous activity but in which surgical intervention was later required for conditions which would have been prevented if the primary treatment had been hysterectomy and bilateral oophorectomy instead of radiation. These 15 cases are counted as indirect failures. The details of these 36 failures are instructive.

Direct Failures (21).—The causes of these 21 direct failures are shown in table 2. The case of carcinoma of the cervix is of particular interest. The patient had a fist-sized myoma with bleeding. Pathologic examination of material removed at curettage revealed no malignant growth. Cervicitis was not evident, therefore conization was not performed. The radium dose was 2,000 mg. hours. The patient returned to her distant home and remained well for more than a year. Later some bleeding occurred at intervals, but it received no particular attention for several months until examination by her physician disclosed the cancer of the cervix and he sent her to us for the required treatment. It is probable that there was a small area of carcinoma within the cervix at the time of the primary investigation and treatment of the myoma and that it was missed in the curettage. The myoma dose of radiation checked the activity of the carcinoma temporarily, but later there was renewed activity and deep extension of the process.

In the case of ovarian carcinoma the patient, aged 55, had a grapefruit-sized myoma with bleeding. As she was a poor operative risk, radium treatment with curettage was employed in the hope that an abdominal operation could be avoided. There was fixation of the myoma, supposedly caused by adhesions from a former inflammation, and this interfered to some extent with deep palpation. The radiation therapy stopped the bleeding temporarily. Five months later recurrent bleeding and discomfort supposedly caused by the myoma led to abdominal operation, which revealed pelvic carcinomatosis of ovarian origin. The extent and type of carcinomatous involvement indicated that the ovarian cancer was present at the primary investigation and was missed in the examination. The fixation of the myomatous uterus and adjacent tissues which was supposedly the result of old inflammatory adhesions was in fact caused by the slow symptomless infiltration of an ovarian carcinoma. The penetration of the malignant growth was so widespread that only palliative measures were possible, and indications were that the process had penetrated beyond cure before the primary examination.

An embarrassing lesson which should not be overlooked is that 4 of the direct failures were due to failures in technic—in that of examination in 2 (a small area of carcinoma within the cervical canal was missed in 1 and an ovarian carcinoma in the other) and in that of intrauterine radium application in 2 (resulting in spot-devitalization, stenosis and persistent metritis requiring hysterectomy, from which, however, both patients made a good recovery).

Indirect Failures (15).—The causes of the indirect failures are shown in table 2. The appendix is removed incidentally in a considerable proportion of hysterectomies, and future appendicitis is thus prevented—therefore we assume that 6 of the 11 later appendectomies in this series would have been prevented if the primary treatment had been hysterectomy.

Though in these indirect failures radiation of the myoma was successful in stopping the myomatous activity and immediate associated disturbances, the fact that it did not prevent certain later incidental developments means that the relative possibility of these incidental developments must be considered in connection with the immediate risks of an abdominal operation when a choice of treatment is being made in a particular case. Also, the possible future developments are to be considered in providing later supervision.

The late development of 4 endometrial carcinomas and 1 ovarian carcinoma emphasizes the importance of regular pelvic check-ups and thorough investigation of any suggestive symptom. In the ovarian case the patient, aged 43, received a radium dose of 2,000 mg. hours for a grapefruit-sized myomatous uterus with a 4 inch (10 cm.) cavity. In addition to the curettage there was conization for chronic cervicitis. All bleeding, menstrual and otherwise, stopped in a month, and there was no more disturbance from the uterus. Two and a half years after the primary treatment an adnexal mass appeared, which at operation proved to be an ovarian carcinoma with some deep penetrations. The old myoma was inactive and atrophied. This case reveals the inadequacy of yearly check-ups, which were formerly considered safe protection. At our last check-up, seven months previously, we detected no evidence of ovarian growth. In this case deep palpation was difficult, but there was no suggestive symptom to indicate the need of palpation under anesthesia. Since our study[1] of "silent" ovarian carcinoma we have advised climacteric patients to come for pelvic check-up every six months, or sooner if any pelvic symptoms arise. That is the minimum requirement in providing safety from advanced incurable ovarian cancer.

Another important factor in the prevention of deaths from ovarian cancer is removal of the involuting ovaries whenever the abdomen is opened in the climacteric age (which may be considered to begin around the age of 42, with some individual variation in either direction). This item is discussed in detail elsewhere[1] as is also the fact that the advance of ovarian carcinoma is so insidious that the clinical picture is that of a slowly increasing ascites without localizing symptoms. In our series of 59 ovarian carcinomas 5 of the patients (nearly 10 per cent) had had a previous abdominal operation with an ovary left at ages 42, 43, 47, 53 and 56, respectively. The ovarian cancer appeared 12, 6, 6, 5 and 8 years respectively after the previous abdominal operation. In all 5 instances the ovarian cancer was advanced when discovered and proved fatal in less than a year. Removal of the involuting ovaries at the previous abdominal operations would have prevented the subsequent development of the ovarian cancers. Each of the 5 women clearly lost her life because an ovary was left at an abdominal operation in the age of involution. The insidious onset of ovarian carcinoma and its symptomless progress to incurability makes imperative the use of every means to prevent its onset.

In regard to whether or not radiation of a myoma reduces the incidence of subsequent uterine and ovarian cancer, consideration of the facts at hand indicates that there is a decided reduction of such incidence. Our records show 2,662 cases of uterine myoma, in 526 of which the patients received radiation of the myoma. Table 3 shows the development of endometrial cancer and of ovarian cancer in the two groups.

The 36 failures from various causes do not indicate that radiation fails to do what may reasonably be expected of it. They indicate only that the cases for radiation should be carefully selected and carefully followed, with the foregoing facts in mind. One learns as much from failures as from successes—perhaps even more.

Table 3.—*Ratio of Cancers in 2,662 Cases of Uterine Myoma*

Cancer of endometrium	
In 2,136 nonradiated cases of myoma	37 (1.7%)
In 526 radiated cases of myoma	4 (0.7%)
Cancer of ovary	
In 2,136 nonradiated cases of myoma	13 (0.68%)
In 526 radiated cases of myoma	1 (0.19%)

Each type of cancer was more than twice as frequent in the nonradiated cases as in the radiated.

SUCCESSES

The cases which followed a favorable course also can teach important facts which need consideration in the serious matter of advising a myoma patient what type of treatment is best for her in view of her special local and general conditions. Of the 526 cases in which myoma radiation was given a trial, 490 did well during the period of observation—that is, the troublesome symptoms of myoma were taken care of by the primary treatment alone or by the addition later of supplementary minor measures.

How long a period of favorable progress is required to indicate success of the myoma radiation? In this series the conditions interfering with the usual cessation of myomatous activity manifested themselves within a comparatively short period—50 per cent in two to six months, 35 per cent in the next six months and all within eighteen months; all who went eighteen months without evidence of interference with the usual postradiation involution had no important trouble in that respect later. A favorable course for two years seems fair as a criterion of success, as far as the cessation of ordinary activity of the myoma is concerned.

Of the 490 cases following a favorable course, 333 were observed for two years or more, running up to twenty years. Addition of the 36 failures (in the whole series to date) to the 333 favorable results in cases observed for two years or more gives 369 cases, with success in an estimated 90 per cent. Results were also favorable in 157 cases in which the period of observation was less than two years. It seems fair to assume that if they had been observed for the full two years the percentage of successes would have been about the same and would number 140. The addition of 333 plus 140 makes 473 radiation successes—that is, over 470 patients for whom we were able to accomplish with radiation and only minor risk what otherwise would have required a major abdominal operation with the serious risks it necessarily involves. That is no small accomplishment. It confirms an important advance in the therapeutic management of uterine myoma. Its attainment is well worth the careful study necessary to sound judgment in estimating the probable results in a particular patient, with the many variables to be considered.

---

[1] Crossen, H. S.: The Menace of "Silent" Ovarian Carcinoma, J. A. M. A. 119: 1485 (Aug. 29) 1942.

It must be kept in mind also that radiation is not necessarily the final step in treatment. It is given in a suitable case to stop myomatous activity, which it usually does. However, if the myoma continues to give trouble hysterectomy may then be performed in the knowledge that the abdominal operation is really necessary.

Table 4.—*Details of the Five Hundred and Twenty-Six Myoma Radiation Cases*

Size of the myomatous uteri		
Fist sized or smaller	456	Failures 31
Grapefruit sized	53	Failures 5
Near to umbilicus	17	Failures 0
Dosage		
1,200 to 2,400 mg hrs, depending on size and other factors		
Spot devitalization and metritis in 7 cases		
Advise moderate dosage, and supplement later if needed		
Supplementary radiation required in 23 cases with successful results		
Symptoms		
Cases with bleeding, 507 (96%), all but 14 were successful		
In the 19 nonbleeding cases—dysmenorrhea, 4; ovulation pain, 1; pruritus vulvae, 1; worried about the tumor, 1; pressure discomfort, discharge, 12		
Pain; ordinarily pain makes the case unfavorable; there are some exceptions		
Ages of patients		
Under 40	36	(7%)
40 to 50	318	(61%)
50 to 60	161	(30%)
Over 60	11	(2%)

Delayed menopause (age 48 to 58) has a sinister significance; in this series three fourths of the endometrial carcinomas occurred in the age period 48 to 58

Another advantage of radiation therapy in suitable cases is that it leads to treatment and thorough investigation at an earlier stage of the patient's disease. While the patient feels well and while only irregular periods or delayed menopause are associated with the fibroid she hesitates to submit to a major surgical operation and is inclined to postpone treatment. Also the physician, aware of the risks of hysterectomy, hesitates to press for immediate surgical intervention while the patient is well, and treatment is delayed. That was a common experience in the days when abdominal operation was the only effective treatment for uterine myoma. Now that we can in suitable cases stop activity of the myoma with only minor risk, patients submit to treatment promptly and welcome the opportunity of being relieved of their anxiety without a major surgical operation. The physician also, knowing the danger of delay and the absence of major risk, feels justified in urging prompt action in an early stage. The importance of early action in these cases is shown by the fact that 23 patients in this series had complicating endometrial carcinoma at the time of the primary investigation.

CONSIDERATION OF DETAILS

As an aid to careful selection and effective treatment, it is well to consider certain other factors in the 526 cases in which myoma radiation was given a trial. The items will be taken up in the following order: size of the myomatous uterus, dosage of radiation, supplementary radiation, symptoms in relation to choice of treatment, age groups of particular interest and associated measures.

Size of the Myomatous Uterus.—The statistics on size are given in table 4. In the compilation of our data we were astonished to find that all 17 patients with extremely large myomas (up to or near the umbilicus) for which radiation was given tentatively got along so well that removal of the growth was not necessary during the period of observation. Of these patients, 1 was observed for twenty years, 1 for fifteen years, 5 for five to nine years, 3 for three to five years, 2 for two to three years and five for less than two years.

Dosage of Radiation.—The fact that 2 of the direct failures were due to subsequent stenosis and pyometra and persistent metritis calls attention to the importance of the radiation dosage and its distribution in the cavity. The spot-devitalization which leads to subsequent small sloughs and later stenosis and pyometra, is caused not so much by a large dosage of radium as by its faulty distribution within the cavity. Wherever there is constriction and firm pressure of tissue against the radium tandem the devitalization effect is increased decidedly—hence, the internal os is the usual site of such trouble. Our experience indicates that with a constricting internal os (one that recontracts immediately after dilatation) it is well to limit the radiation in that particular area to about 500 mg. hours. In general it is well to give moderate dosage according to conditions, with the idea of some supplementary roentgen therapy later if needed, rather than to risk trouble from a heavy radium dose.

Ordinarily the postradiation complications of stenosis and pyometra yield to the office procedures of dilatation and tubal drainage, but not always. In this series of 526 patients there were 7 in whom this complication developed. In 5 cases the condition yielded to minor measures; in 2 chronic metritis persisted and required hysterectomy. All 7 patients eventually recovered.

Supplementary Radiation.—When after a radium treatment bloody discharge persists in spite of the use of antihemorrhagic medicaments or recurs after a few months it may usually be easily stopped by supplementary radiation with x-ray, which does not require hospitalization. For later bleeding, roentgen therapy may be used provided the time since curettage has not been so long as to raise the question of possible development of endometrial carcinoma in the meanwhile. This period varies in different types of disease, but in general it may be said that if the previous curettage showed endometrial hyperplasia recurrence after six months would indicate the advisability of another curettage. If the previous curettage showed normal endometrial tissue, simple roentgen therapy would suffice to control bleeding which recurred within a year, unless there was some factor to indicate otherwise. In the group of 490 cases that ran a favorable course during the period of observation there were 23 which required some supplementary radiation.

Symptoms.—The symptoms presented by a patient with myoma indicate the type of treatment most likely to prove effective. When bleeding is the principal symptom and the age of the patient permits use of the full myoma dose of radiation the situation is usually well controlled by it. When pelvic pain or pressure discomfort is prominent there is little likelihood of satisfactory relief.

Bleeding: The principal symptom in 507 of these patients was bleeding. The tendency may be manifested as excessive menstruation, intermenstrual bleeding or irregular bleeding after the menopause. A striking manifestation is the prolongation of fairly regular periodic flows beyond the normal menopausal age. This "delayed menopause" has a sinister significance; it indicates undue ovarian activity in the involutionary age, when erratic cellular activity is so likely to show a malignant tendency. This erratic activity of the cells is indicated by the presence of endometrial hyperplasia in these cases and by the frequency with which the hyperplasia has advanced to carcinoma in some portion of the endometrium. In our series, the curettages showed all stages of the progressive process from normal endometrium through endometrial hyperplasia to endometrial carcinoma.

Nonbleeding Myoma: As bleeding is usually the principal symptom requiring treatment in cases of myoma, it becomes of special interest to know what symptoms required treatment in the 19 cases of nonbleeding myoma shown in table 4. The 4 patients with dysmenorrhea were in the climacteric age; in all the pain was stopped by the radiation amenorrhea, as was also the ovulation pain and the menstrual pruritus. Most of the 12 patients with moderate discomfort due to pressure and with uterine discharge received some relief as a result of the radiation-induced cessation of myomatous and ovarian activity and later shrinkage.

A patient aged 51 with a large myoma extending to the umbilicus had no bleeding and no physical symptom of any kind. But she was worried about the growth, and it seemed that her anxiety might be less if she were given a course of treatment. For this reason a myoma dose of roentgen therapy was given, and arrangements were made for the regular twice-yearly observation visits. This relieved the patient's anxiety, and nothing disturbing happened during the subsequent five years of observation. At the end of that time the myomatous uterus was inactive and definitely smaller.

Pelvic Pain: When pelvic pain is an important feature in the symptomatology, myoma radiation will not give relief. However, there are exceptions, which may be identified by study of the type and location of the pain. In some patients the pain is exclusively menstrual, coming only with the periods and consisting of typical "menstrual cramps." Radiation amenorrhea relieves this type of pain and also ovulation pain.

Ordinary pain between periods is not likely to be stopped by myoma radiation, for it is usually due to some complicating condition over which radiation therapy has little or no control. Chronic adnexal pain is the most commonly encountered. Another type of chronic inflammatory condition to be aware of is the pathologic appendix. When there is any suspicion of chronic appendicitis gastrointestinal roentgenologic examination is indicated to determine the condition of the appendix before deciding on radiation for the myoma.

Ages of Patients.—The ages of the 526 patients who received myoma radiation are shown in table 4. It is significant that 30 per cent of these patients were in the fifties, an age when normally the menopause is past and ovarian involution well advanced. Myomatous activity is supposed to be due to ovarian activity. Why then this large number of patients requiring radiation for myomatous activity at an age when ovarian activity normally ceases? The answer is that in these cases of myoma ovarian involution does not proceed in the normal way.

Delayed Menopause.—The myoma keeps up uterine and pelvic congestion and erratic ovarian and endometrial activity long after these temporary organs should have ceased to function. Hence the frequency of delayed menopause and endometrial hyperplasia and the associated tendency to endometrial carcinoma (corpus cancer). Some years ago, Dr. Hobbs and one of us (R. J.) analyzed[2] a series of 56 cases of carcinoma of the corpus uteri in which the age at menopause was known. We found that the menopause was delayed to age 50 in 60 per cent of these malignant cases, whereas in a series of women without cancer the menopause was delayed to age 50 in only 15 per cent. In a recent article by Randall[3] attention has been called to the frequent association of delayed menopause and cancer of the corpus uteri. He found that in a series of 113 such cases the menopause was delayed to age 51 in 35 per cent, while in his nonmalignant cases the menopause was delayed to age 51 in only 8 per cent. The percentages of these two investigations correspond closely, considering that the later investigation is based on an additional year of menopausal delay. Notice that in both series the percentage of delayed menopause in malignant cases was four times that in the nonmalignant.

Table 5.—*Measures to Prevent Deaths from Uterine and Ovarian Malignancies*

1. Conization whenever chronic cervicitis is present
2. Investigation of delayed menopause by curettage; (endometrial cancer is found four times as often in cases of delayed menopause as after normal menopause)
3. Regular check-up examination twice yearly in climacteric age, to detect the symptomless infiltration of ovarian carcinoma
4. Removal of involuting ovaries whenever the abdomen is opened in the climacteric age; (in our series of 59 ovarian cancers, 5 of the women had had abdominal operation with an ovary left in at the age of involution)

ASSOCIATED MEASURES

When arranging for radiation therapy for a uterine myoma, provision should be made also for certain associated measures. There are four accessory steps necessary for the safe handling of the case. They are (1) deep pelvic palpation under the anesthesia, (2) curettage, (3) conization when chronic cervicitis is present and (4) accurate recording of the examination findings in the operative note.

1. *Deep Pelvic Palpation.*—The anesthesia for the curettage gives opportunity for deep palpation of the ovarian areas, and the anesthesia should be increased sufficiently to give good relaxation to facilitate this. The

---

[2] Crossen, R. J., and Hobbs, J. E.: Relation of Late Menstruation to Carcinoma of Corpus Uteri, J. Missouri M. A. **32**: 361 (Sept.) 1935.

[3] Randall, C. L.: Recognition and Management of the Woman Predisposed to Uterine Adenocarcinoma, J. A. M. A. **127**: 20 (Jan. 6) 1945.

importance of deep palpation under anesthesia is not fully appreciated until one has had the harrowing experience of having a patient return with irremovable ovarian carcinoma which was missed at the primary investigation because the ovarian enlargement was too small at that time to be detected through a resisting abdominal wall.

2. *Curettage.*—The 23 cases of complicating endometrial carcinoma discovered at the primary curettage constitute sufficient comment on the importance of this measure. The curettage should cover the walls of the cavity carefully and systematically, so that if there is only a small area of carcinoma it will not be missed. Of course all the tissue removed must be saved, otherwise there is no certainty of excluding the possibility of cancer, for malignant growth may be present only in the small discarded particles. A moment's thought will show the fallacy of depending on the pathologic report on part of the material removed by curettage to exclude the possibility of cancer, and yet this "picking out of suspicious pieces" may still be seen in operating rooms.

3. *Conization.*—Complicating chronic cervicitis was treated by conization, along with the application of radium for the myoma. The conization excluded the present existence of cancer in the cervix and aided in preventing it in the future by removal of the source of chronic irritation, which is so dangerous in the climacteric period. In this series of 526 cases of myoma treated by radiation 233 of the patients had chronic cervicitis which was treated by conization. No cancer has been reported among those with conized cervices. The case of cancer of the cervix previously described in detail occurred in a patient in whom conization had not been performed.

4. *Accurate Recording.*—When the patient who has not been seen for a year or two returns, pelvic examination may show that an ovary is somewhat enlarged. In view of the insidious onset and symptomless progress of ovarian carcinoma, the physician wonders if the enlargement is a new growth or an old enlargement of no importance and turns anxiously to review the pelvic findings at the time radiation therapy of the myoma was given. Unfortunately, accurate deep palpation under anesthesia and itemized recording of observations did not seem important at that time, when attention was focused on the radiation therapy—so there is no definite record of the former condition of each ovary. Experience is a great teacher, and the lack of accurately recorded data causes serious dilemmas, which alert the physician to his responsibilities.

SUMMARY AND CONCLUSIONS

Any major addition to the therapeutic management of an important disease entity requires clinical confirmation of its adaptability and effectiveness under the various physical and psychologic conditions of actual practice and in critical comparison with other methods which are available. In the use of radiation therapy in selected cases of uterine myoma in women of climacteric age there is now a sufficient accumulation of carefully observed cases to justify deductions as to its indications and special requirements. This study of our experiences is a contribution to the factual assessment of its advantages and limitations.

1. In this series of 549 cases of myoma with conditions apparently favorable for the treatment of the myoma by radiation, the primary curettage revealed that 23 patients had complicating endometrial carcinoma.

2. Success was attained in 90 per cent of the 526 cases in which myoma radiation was given a trial. The failures were of two kinds—direct (7 per cent) and indirect (3 per cent). The direct failures were those in which the radiation failed to stop the myomatous activity and associated troublesome symptoms. In the indirect failures, the radiation stopped the myomatous activity and associated symptoms, but surgical intervention was later required for some incidental development which would have been prevented if the primary treatment had been complete hysterectomy and bilateral complete oophorectomy.

3. The 90 per cent of successes means that for over 470 patients we were able to accomplish with radiation therapy and only minor risk what otherwise would have required a major abdominal operation.

4. It must also be kept in mind that radiation is not necessarily the final step in treatment. If the myoma of the uterus continues to give trouble, hysterectomy may then be carried out in the knowledge that the risks of abdominal surgical operation are justified. It is easy to advise hysterectomy, but when things go badly it is not easy to restore the patient to life for a trial of radiation therapy, which might have proved sufficient.

5. Another advantage of treatment by radiation in suitable cases is that it leads to treatment and thorough investigation at an earlier stage of the patient's disease. The importance of early action in these cases is shown by the finding of endometrial cancer in 23 of these myoma patients at the primary investigation.

6. In the overall results secured certain associated measures have an important part. These associated measures are: (1) deep palpation of the ovarian areas under the relaxation of anesthesia, (2) curettage to determine if there is any intrauterine complication, (3) conization when there is chronic cervicitis and (4) accurate recording of the findings in the examination under anesthesia, for future reference in the event that the patient returns with new bleeding or a suspicious adnexal mass.

ABSTRACT OF DISCUSSION

Dr. William E. Costolow, Los Angeles: Dr. Crossen has given us an unbiased analysis of the question of choice of treatment in fibroid tumors. He has shown that the careful selection of cases is the most important single factor contributing to success in the treatment of fibroids by radiation therapy. The diagnosis of uterine myoma should be definitely established before radiation therapy is commenced. If doubt exists in regard to the diagnosis then surgical intervention is the treatment of choice. Radiation has been used successfully for many years in the treatment of certain uterine fibromyomas. Contraindications to its use have been established for many years. Some of these are quite definite—others possibly are too rigid to be exactly substantiated, and patients for radiation therapy are no doubt being selected too conservatively. Some time ago the Los Angeles Tumor Institute reported 1,009 cases of fibroid tumors treated by radiation methods. The average age of the patients was 43.2 years, and 75 per cent were over 40 years of age. Of 722 fibroids which were not larger than a three months pregnancy, there was reduction of the uterus to a size normal or only slightly enlarged in 93.5 per cent of the patients. Only 2.4 per cent of these patients were operated on later. The findings at opeartion were as follows: 3 ovarian cysts, 3 submucous fibroids, 3 carcinomas of the fundus, 1 carcinoma of the cervix, 1 intestinal obstruction and 4 with no relief of pressure symptoms. In a group of 264 cases the tumors were the size of a 4 months pregnancy or larger. Tumors of this size are usually considered to require surgical intervention. Results of radiation treatment in this group were not poor, as only 4.2 per cent later needed surgical intervention because in 7 there was no reduction in the size of the mass, in 1 there was an ovarian cyst, in 1 a dermoid cyst and in 2, degeneration of the mass. Mistakes in diagnosis are the common cause of failure in fibroid irradiation. In only 4 cases in the entire series, or 0.04 per cent, did cancer develop later. This figure is lower than that for the normal incidence of uterine cancer in women with an average age of 43.2 per cent. Dr. Crossen has again demonstrated by his excellent results that radiation therapy is a most satisfactory method of treatment in properly selected cases of uterine fibroids.

Dr. Charles E. Galloway, Evanston, Ill.: The paper brings up a controversial subject, and I think that the controversy should be continued in an orderly and gentlemanly manner. Radiation for fibroids comes and goes as a treatment, like veratrum viride in the treatment of eclampsia. Many of us have long since discarded it and continue to reject it because we do not think that it is fundamentally sound. I would like to ask Dr. Crossen what the mortality rate was in this series. I did not hear it mentioned. I feel that there is mortality, and I also feel that there is a fairly large morbidity, both acute and chronic, following radiation. Women who have had radium inserted into the uterus may come in years later with an extremely irritable bladder or an irritable rectum. It causes a late obliterative endarteritis that results in a great deal of discomfort. In the desire to do away with temporary symptoms, sight must not be lost of the ultimate discomfort that may be caused. I do not believe that other physicians, either, will agree that women who have had radium used for the treatment of small uterine fibroids are less apt to develop cancer of the uterus. A recent survey by Dr. Corscaden in New York would tend to show that such women are about three times as apt to have a carcinoma of the fundus of the uterus develop later on than are women who have not had radium applied, and in my opinion that factor should be considered. A favorable course for a period of two years is not sufficient to evaluate results in a patient; one must consider that woman until she dies, and until one gets those complete statistics one will not have the ultimate answer. Twenty-three patients had to have another dose of radium. We hear mentioned, too, in this discussion, the words, "the high mortality of major surgery." I do not think that hysterectomy carries with it a high mortality rate. If a woman has a small fibroid tumor in the uterus and it is giving her trouble, she is much safer in having it removed than she is in having it dealt with by the application of some foreign element into her body in order to bring about a certain physiologic change. The appendix has no place in gynecology, and what might have occurred to the appendix is a secondary consideration. Any one performing a surgical operation in the abdomen is better off if he lets the appendix alone; and personally, I remove most uteri with small fibroids through the vagina. This is a controversial subject and should be discussed. I think Dr. Crossen has made up his mind about what he wants to do, but I want it understood that some of us do not agree with that decision.

Dr. Clyde K. Emery, Los Angeles: I wish to ask Dr. Crossen if a uterine myoma or a fibroid can become malignant? I have never heard of a case where a cancer develops in a fibroid. In my opinion there is not a significant difference between the incidence of cancer of the uterus before and after radiation therapy. But the two significant things that should be considered are that when radium is inserted the physician has a good chance to do a dilatation and curettage. Many times, when subtotal hysterectomies are to be performed, they are not preceded by a diagnostic curettage. It has been my experience, like that of every one else doing radiation therapy, that cases are referred in considerable numbers in which the carcinoma of the cervix or the endometrium has been diagnosed by the pathologist following the removal of the upper part of the uterus. Another point that Dr. Crossen mentioned is the possibility of doing a good conization of the cervix at the time the radium is inserted. I noticed that only half or a little over half of the patients that he had treated had a conization, and I have always considered that it was a most effective way of preventing the development of a carcinoma of the cervix in the future. I wonder if Dr. Crossen would not consider that conization was a good routine procedure to carry out in every case.

Dr. J. L. Bubis, Cleveland: The question of using radium in the treatment of fibroids has been controversial. There are clear indications for the use of radium in the treatment of certain types of fibroids, especially in the intramural type. Its use is not advised in the intraligamentary, the pedunculated subserous or degenerative type of fibroid, in which a slough very often follows. Some fibroids are calcified, and the use of radium does not help much in those cases. Old, chronic pelvic inflammations may also be rekindled by radium therapy. With improved surgical skill, technic and care, including transfusions, intravenous dextrose and so forth, total hysterectomies and the removal of diseased adnexa often give much more satisfactory end results than can be obtained by the use of radium. I usually remove the appendix unless it is of the involuting type, contrary to the procedure of Dr. Galloway. In some extremely difficult cases I have occasionally left the appendix in, but I have had to subject a number of these patients to subsequent surgical operations. There are certain indications for radium therapy in the treatment of fibroids of the uterus, but I believe that the indications for its use are less than those enumerated by Dr. Crossen.

Dr. R. Luikart, Omaha: The ultimate results in the treatment of fibroids depends on proper selection of the cases and proper radiation as stated by Dr. Crossen. If a patient with a uterine fibroid complicated by pelvic inflammatory disease is treated with radium, the results, to say the least, are likely to be unsatisfactory. That is the fault not of the radium but of the selection of the case. When the uterine fibromyoma is properly selected the treatment with radium gives relief to the patient with much less of danger, discomfort, mortality and morbidity, hospitalization and expense and with much more rapid recovery than does a surgical operation.

Dr. Robert J. Crossen, St. Louis: Dr. Galloway brought out Dr. Corscaden's figures. Dr. Corscaden has not limited the type of patient in his series at all. He includes all benign bleeding and has mentioned no conizations; hence I do not believe his series applies to this particular subject. We have limited our series to fibroids, selected our cases carefully and insisted that certain procedures be followed out, namely, curettage to rule out endometrial carcinoma, conization to get rid of chronic cervicitis and so forth. We are doing conization in more cases now than we did previously and most of our patients are conized at the time of the curettage and radium treatment. It is only by careful analysis that real facts can be determined. I don't think any one can say, as they do so frequently in meetings, "I have a feeling that over a period of so many years such and such is true." For that very reason we went into detail and carefully analyzed this large series of cases, which extended over a period of twenty years, bringing out the failures and the reasons why they were failures, to see if we could not get some accurate statistics on this subject. I am only hoping that this work will stimulate report of a further series of this kind.

Glanders.—Primarily an equine disease, glanders occurs naturally in two forms, namely acute or chronic systemic glanders and cutaneous glanders. In the past the disease in man has usually been contracted by direct or indirect contact with infected horses. During the past thirty years, however, owing to constant testing of horses and eradication of infected animals, this disease has been rare in this country. The only case known by the writers to have occurred in the United States in recent years was described by Herold and Erickson in 1938. The disease occurs more frequently in Russia, the Balkans and parts of Asia and Africa where veterinary control measures are less stringent or nonexistent. A number of accidental infections have been recorded in the past among laboratory workers.—Howe, Calderon, and Miller, Winston R.: Human Glanders: Report on Six Cases, *Ann. Int. Med.*, January 1947.

CEREBELLAR AND SPINAL INJURIES AFTER CHIROPRACTIC MANIPULATION

H. R. PRATT-THOMAS, M.D.
and
KNUTE E. BERGER, M.D.
Charleston, S. C.

Several maleficent results of cultist mechanotherapy have been reported.[1] We wish to describe 3 cases including necropsy observations in which cerebellar and spinal injury occurred. Careful search of the literature leads us to believe that at least 2 of these are unique, as no other comparable cases have been found.

REPORT OF CASES

CASE 1.—*History and Course.*—A white man aged 32, a boat captain, had been complaining of persistent headaches and an occasional "giddy" feeling and nausea for four weeks. He had been working continuously running his boat. During the two weeks prior to admission he had been going to a chiropractor frequently for "adjustments." The afternoon prior to admission he felt as usual but went for another "treatment." During the course of the manipulation he became unconscious, and a physician was summoned. He was admitted to the hospital at 3 p. m. Feb. 10, 1941. On admission his blood pressure was 135 systolic and 60 diastolic, his pulse rate 74, his respiratory rate 24 and his temperature 97.4 F. He was well developed and well nourished. He was restless, moving about frequently and showing generalized clonic tremors. The pupils were round, regular and equal and responded to light. The tongue was in the midline, and the neck was freely movable, without pain or tenderness. Examinations of the lungs, heart and abdomen revealed essentially normal conditions. The reflexes were as follows: left biceps 3 plus, right biceps 2 plus and patellar 4 plus bilaterally. There was bilateral ankle clonus, and the great toe reflex was positive bilaterally.

Laboratory examinations revealed an erythrocyte count of 5.15 million with 90 per cent hemoglobin. The white blood cells numbered 16,600 with 85 per cent polymorphonuclears. Catheterized urine was normal. Roentgenograms of the neck revealed no evidence of fracture or dislocation. A lumbar puncture six hours after admission showed an initial pressure of 270 mm. of water. Pressure on each jugular vein resulted in a rise to 290-300 mm. followed by a fall to 280 mm. Bilateral compression resulted in a rise to 350 mm. with sluggish fall. The cytology of the spinal fluid showed 10 white blood cells, of which 60 per cent were lymphocytes, and 156 red blood cells per cubic millimeter. Tests for globulin and sugar were negative.

Later in the evening it was noted that the patient held his head to the left and that any change in its position caused cessation or interference with respiration. The lower extremities became spastic, while the upper extremities became flaccid. Virtually no voluntary movements were observed. The cranial nerves were intact but the optic disks showed loss of physiologic cupping.

A lumbar puncture the next morning showed an initial pressure of 169 mm. of water. On right jugular compression it was 170. On left jugular compression it was 168, and on bilateral jugular compression it was 164 mm. The blood pressure was 170 systolic and 50 diastolic, and the pulse was bounding. During the night the patient had required catheterization. Hyperthermia had developed despite sponging, and terminally the temperature reached 107 F. The patient expired twenty-four hours after admission. The clinical diagnosis was "contusion of the medulla oblongata with complete block."

Pathologic Observations.—Necropsy was performed two hours after death. The body was that of a well developed and well nourished white man showing no external evidence of injury. The calvarium and skull showed no evidence of fracture. The brain was edematous with decided flattening of the convolutions and narrowing of the sulci. The vessels over the brain stem were thin-walled and pliable, but fairly firm clot was present in the basilar, left anterior inferior and right posterior inferior cerebellar arteries (fig. 1 *A*). The cerebrum appeared normal except for edema. The cerebellum was softer in consistency than normal, and horizontal section revealed greatly softened brownish gray tissue occupying a portion of the left lobe of the cerebellum and measuring 3.5 by 4.5 cm. (fig. 2). This also was present in the left cerebral peduncle and pons. Within the right lobe of the cerebellum there were similar multiple areas of softening. The fourth ventricle was compressed to a practically imperceptible slit. There was a moderate cerebellar pressure cone and slight notching of the hippocampal gyri. The lateral ventricles were not dilated.

The interior of the cervical portion of the spinal canal was smooth, and palpation showed no dislocation or unevenness. The ligaments of the atlas and axis allowed some movement, and it was thought that they were more lax than usual. There was no dislocation of the odontoid process, and the medulla showed no evidence of trauma.

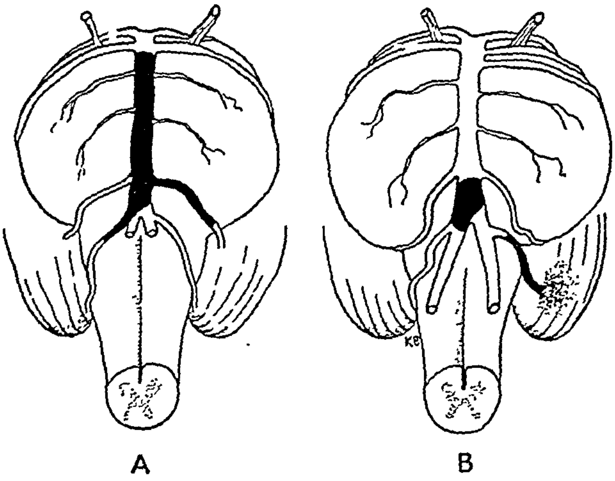


Fig. 1*A*—Diagram of basilar artery in case 1 showing thrombus (black) in basilar, left anterior inferior and right posterior inferior cerebellar arteries. *B*, case 2, showing thrombus in basilar, right vertebral and left posterior inferior cerebellar arteries with softening of the left tonsil.

Histologic Data.—Sections confirmed the recent but definite antemortem thrombosis of the basilar, anterior inferior cerebellar and posterior inferior cerebellar arteries (figs. 1 *A* and 3). There were areas of frank necrosis in the cerebellum, cerebral peduncle and pons with multiple punctate and linear hemorrhages. The large areas noted grossly showed extensive necrosis with complete disintegration of cell architecture and much erythrocytic extravasation. Foci of intracellular and extracellular edema with early softening were also visible. Hemorrhages were most conspicuous in the periphery of the right lobe of the cerebellum (fig. 4). Occasional collections of leukocytes were present in the necrotic and hemorrhagic areas. Many of the small vessels contained thrombi and a few showed necrosis of their walls with heavy leukocytic exudation. There was no evidence of arteriosclerosis or syphilis.

CASE 2.—*History and Course.*—A white woman aged 35 had been periodically visiting a chiropractor because of "hay fever." After a "treatment" on March 2, 1945 she complained of feeling "dizzy," and at the suggestion of the chiropractor she remained for further treatment. On March 3 she was taken to her home in an unconscious condition by the chiropractor at 1 p. m. He instructed the family to take her to a physician. She was

---

From the Department of Pathology, Medical College of the State of South Carolina.

[1] O'Neill, B. J., and Crawford, W. W.: Intraabdominal Hemorrhage from Stomach Due to Osteopathic Treatment: Report of a Case; J. A. M. A. **79:** 1607 (Nov. 4) 1922. Blaine, E. S.: Manipulative (Chiropractic) Dislocations of the Atlas, ibid. **85:** 1356-1359 (Oct. 31) 1925. Fisher, E. D.: Report of a Case of Ruptured Intervertebral Disc Following Chiropractic Manipulation, Kentucky M. J. **41:** 14 (Jan.) 1943.

brought to the hospital in an unconscious state and expired that night at 10:30 p. m. Details of the clinical findings are not available.

Pathologic Observations—Necropsy was performed fourteen hours after death. The body was that of a well developed, well nourished white woman. External examination reveals no evidence of trauma. Except for pulmonary edema, the gross findings were limited to the head.

The calvarium was intact and after opening the intact dura the convolutions and sulci were seen to be well defined. The cerebellar tonsils protruded into the foramen magnum, and their tips showed hemorrhagic discoloration and softening (fig. 5). This cerebellar pressure cone was very prominent, measuring 1.5 cm. in height and being somewhat more sharply defined on the right There was also softening of the adjacent left cerebellar hemisphere Careful examination of the skull after stripping away the dura revealed no evidence of fracture. There was increased mobility of the first and particularly the second cervical vertebra, the first articulating more freely against the occipital condyles than is usual. The cervical spinal cord was removed by means of a posterior approach and showed no evidence of hemorrhage or softening in its substance.

Microscopically the cerebellum showed disruption of tissue in the peripheral area with multiple punctate and linear hemorrhages There was edema and softening of the cerebellar substance, with thrombosis of the posterior inferior cerebellar artery which led directly to one of the areas of softening (fig. 6). Early thrombus was also found in the basilar and right vertebral arteries (fig 1 *B*). The vessels showed no other abnormality that could have been contributory in any way. There was also definite cellular swelling and widening of tissue interstices, with vacuoles about nerve cells and between fibers and with focal areas of early softening in the cerebellum, medulla and upper part of the cervical cord.

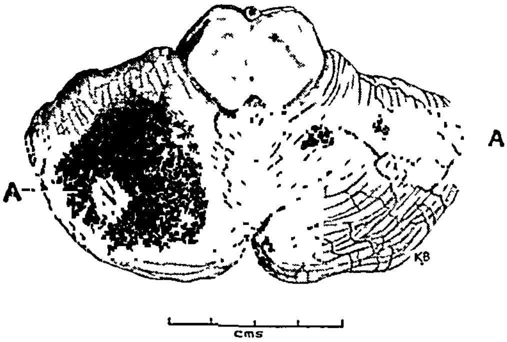


Fig. 2 (case 1)—Superior aspect of cerebellum showing multiple areas of hemorrhagic softening (*A*).

Case 3—*History and Course.*—A white man aged 31, employed as a rigger, noted severe pain in the neck and chest after carrying a piece of steel up three flights of stairs on Aug. 12, 1945. The pain was not relieved by anodynes He went to a chiropractor, who told him he had a nerve out of place and that he would require several treatments During the fifth treatment, about four days before admission, the patient states that his back was "mashed" and shortly afterward there developed increasing weakness and numbness of his legs The day before admission he was unable to walk.

On admission Aug 31, 1945 examination disclosed a well developed and well nourished white man with a blood pressure of 120 systolic and 80 diastolic, a temperature of 100 F., a pulse rate of 90 and a respiratory rate of 18 He was able to move his left leg but could move the right leg only with great difficulty. During the next three days there developed complete paralysis of both lower extremities with absent reflexes and loss of pain sensation up to the level of the nipples. The spine was stiff. The patient was unable to void and required catheterization; he stated that he had no control of his anal sphincter.

Roentgenograms of the cervical, thoracic and lumbar spine were negative except for a slight rotatory curvature of the third, fourth and fifth thoracic vertebrae. There was no evidence of fracture or dislocation of the spine.

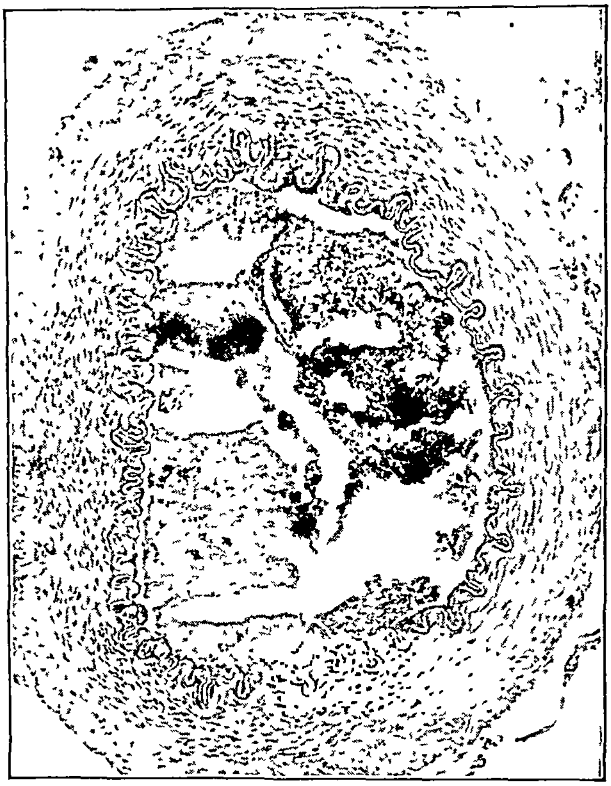


Fig. 3 (case 1)—Basilar artery showing thrombus partially filling its lumen Hematoxylin and eosin, × 60.

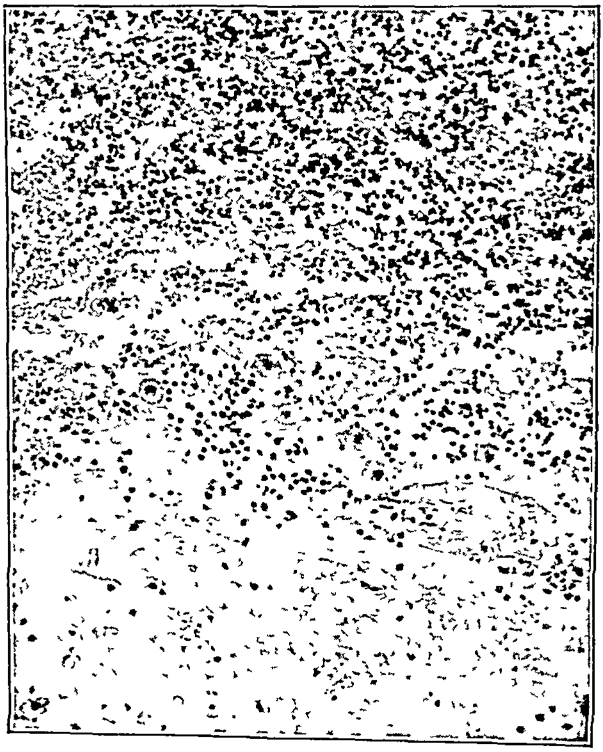


Fig 4 (case 1)—Perivascular and irregular linear hemorrhages in cerebellum Hematoxylin and eosin, × 150.

The blood Wassermann test was negative. Lumbar puncture revealed an initial pressure of 74 mm. of water with free flow of spinal fluid. On jugular compression the pressure rose to 110 mm. The fluid was clear but contained 37 cells per cubic millimeter, 20 per cent of which were polymorphonuclears and 80 per cent lymphocytes. The total protein was 422 mg. per hundred cubic centimeters. Kolmer and Kline tests of the spinal fluid as well as the colloidal gold curve were negative.

Shortly after admission of the patient there developed a febrile course associated with chest pain, dyspnea, pulmonary rales and a cough productive of mucoid sputum. The respiratory difficulty increased, and cyanosis persisted despite the administration of oxygen so the patient was placed in a respirator. He became irrational and died of sepsis on the seventeenth hospital day.

Pathologic Observations.—Necropsy was performed five hours post mortem. The body was that of a well developed but rather poorly nourished white man with decubitus ulceration. There was a pulmonary abscess 3 cm. in diameter in the peripheral portion of the right middle lobe with a right empyema.

Examination of the head and neck disclosed no evidence of trauma. *The brain, meninges and cerebral vessels showed no* pathologic changes. The spinal cord was removed, and a reddish membranous area 5.5 cm. in length was found covering the external surface of the posterolateral aspect of the dura beneath the laminas of the first and second thoracic vertebrae. Nine centimeters below the medulla there were prominent vascular markings and softening of the center and left half of the cord (fig. 7). As the cord was sectioned downward there was well defined softening and brownish discoloration, and at a point 15 cm. below the medulla the entire cord was soft and discolored. Below this for a distance of 17.5 cm. practically the entire cord was soft and brownish, with hemorrhages about the canal in its posterior aspect. No vertebral fracture or dislocation was found. The dura was intact.

Microscopically there was hemorrhage within the dura as well as on its external surface, which showed organization with a layer of granulation tissue containing fibrocytes, lymphocytes and macrophages. Selected sections of the spinal cord showed variable degrees of necrosis, varying from rather well demarcated focal areas to practically complete destruction of cord tissue with scattered hemorrhages and extensive gitter cell reaction (fig. 8). The anterior and dorsal spinal nerves also showed degeneration.

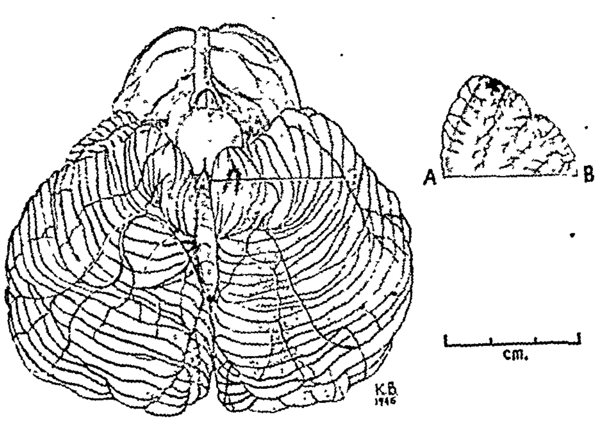


Fig. 5 (case 2).—Swollen, herniated, contused tonsils of cerebellum. Stippling represents areas of softening.

COMMENT

These 2 instances (cases 1 and 2) of isolated cerebellar contusion seem unique, as review of the literature reveals no similar cases. It is difficult to give an unequivocal explanation of the mechanism productive of these injuries, as we do not know the exact application of the injuring forces. In these cases there is considerable evidence that the damage done to the cerebellum and brain stem was produced by impairment of the blood supply as well as by direct trauma.

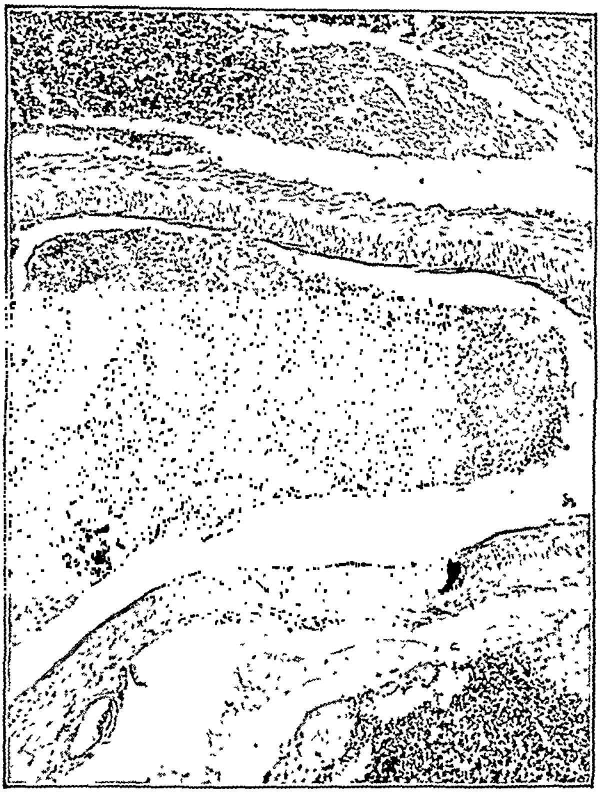


Fig. 6 (case 2).—Thrombosis of posterior inferior cerebellar artery. Hematoxylin and eosin, × 75. Photomicrograph slightly reduced from a magnification of × 75.

It is established that thrombosis of normal as well as abnormal arteries and veins may occur as a result of various traumas such as blunt injury (contusion)[2] or muscular strain.[3] Intracranial vessels may be more susceptible in that the extracerebral intracranial vessels are not supported by surrounding tissues and have a less developed elastica externa and adventitia than have other peripheral arteries.[4] Fibrin thrombi in cerebral vessels have been reported in concussion.[5] Also it is possible that there is a vasospastic element in cerebral vessel thrombosis[6] which may aggravate the effects of partial occlusion. Although occlusions of the basilar and/or cerebellar arteries have been described,[7] we have found no descriptions in the literature related purely to trauma, the thromboses previously described being associated with vascular disease, rheumatic fever, syphilitic endarteritis and septicemia.

Thrombosis of nutrient vessels is demonstrable histologically in our cases. The mechanism by which thrombosis was produced is speculative, but there are several

---

2. Perry, T. T., and Allen, E. V.: Acute Arterial Thrombosis Following Contusion, Proc. Staff Meet., Mayo Clinic **18**: 19-26 (Jan. 27) 1943.
3. Matas, R.: On the So-Called Primary Thrombosis of the Axillary Vein Caused by Strain, Am. J. Surg. **24**: 642-666 (June) 1934.
4. Cobb, S.: The Cerebrospinal Vessels, in Penfield, W.: Cytology and Cellular Pathology of the Nervous System, New York, Paul B. Hoeber, Inc., 1932, vol. 2, Sept. 12, p. 595.
5. Osnato, M., and Giliberti, V.: Postconcussion Neuroses-Traumatic Encephalitis, Arch. Neurol. & Psychiat. **18**: 181-214 (Aug.) 1927.
6. Wilson, S. A. K., and Bruce, A. N.: Neurology, ed. 1, Baltimore, Williams & Wilkins Company, vol. 2, p. 1087.
7. Walshe, F. M. R.: Diseases of the Nervous System, ed. 4, Baltimore, Williams & Wilkins Company, 1946, p. 106. Adams, R. D.: Occlusion of the Anterior Inferior Cerebellar Artery, Arch. Neurol. & Psychiat. **49**: 765-770 (May) 1943. Goodhart, S. P., and Davison, C.: Syndrome of the Posterior Inferior and Anterior Inferior Cerebellar and Their Branches, ibid. **35**: 501-524 (March) 1936.

possibilities. As the involved vessels were peripherally situated they could have been damaged by manipulations that forcibly brought them into contact with the cranial case. That contusion of the surface of the cerebellum did occur is shown by disruption of architecture and hemorrhages in its superficial substance. Distortion with partial or complete occlusion of either of the vertebral arteries or the basilar artery could conceivably have the same effect. Occlusion of the basilar or vertebral arteries so as to include one or more of the cerebellar branches might result in sufficient focal cerebellar ischemia to cause the lesions found in these 2 cases. The mechanism by which vertebral or basilar arterial injury or temporary blockage might be caused is also problematic. Great extension and flexion of the head produces changes in the configuration of the cranial outlet. Lateral movements and rotation also alter its shape, but to a less extent than pronounced extension. Extension results in narrowing of the craniospinal aperture due to a change in the relationship of the atlas and base of the skull. Such a mechanism might produce pressure on the basilar or vertebral arteries and actually injure their walls; particularly as these vessels are in close proximity to the foramen magnum and basilar portion of the occipital bone. We consider that repeated and aggravated changes in the shape of the cranial aperture may have a definite bearing on the vascular phenomena observed in these 2 cases.

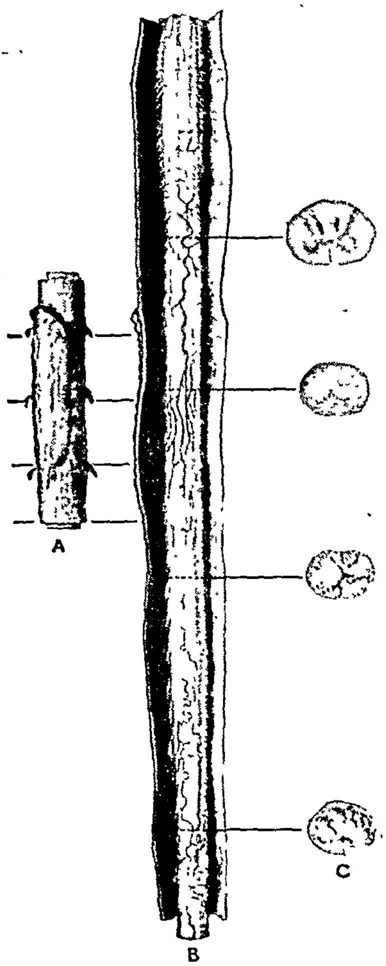


Fig. 7 (case 3).—*A*, segment of cord at the first, second and third thoracic levels showing posterior view of the organizing extradural [illegible] aspect of the [illegible] congestion, [illegible] cross sections of cord showing cavitation, softening (stippled) and hemorrhage (black).

In case 2 there was a localized cerebellar pressure cone with actual contusion of the protruding tips of the cerebellar tonsils and without general cerebral edema. Whether or not extension and flexion of the head was the mode of initial injury, it is believed that it played a role in the production of the changes found at necropsy. After edema of the cerebellum and brain stem had once been initiated, further extension and flexion could exert a kneading action that would aggravate the traumatic changes and, if continued, establish a vicious cycle. That there is a delicate balance between a swollen brain and the amount of pressure that may be applied to it by its confining case is well illustrated in case 1, in which any change in the position of the patient's head caused interference with or complete cessation of respiration.

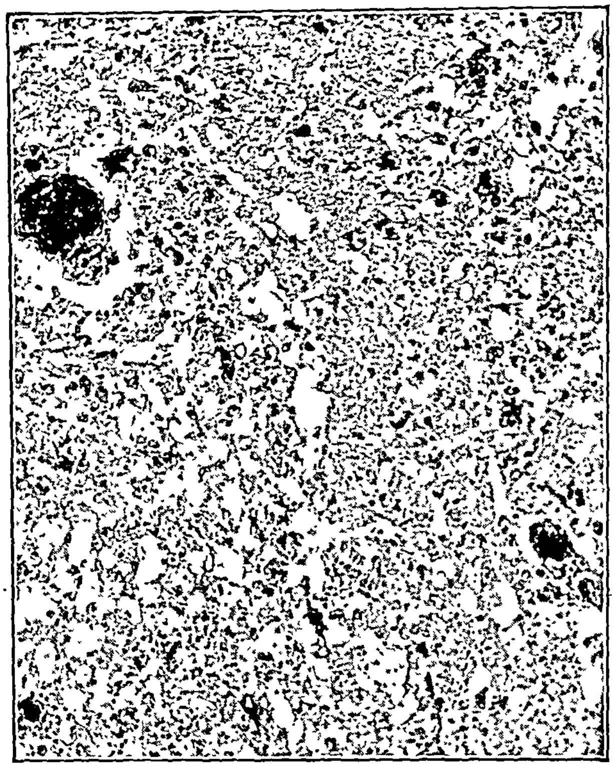


Fig. 8 (case 3).—Extensive myelomalacia with gitter cell response. Hematoxylin and eosin, × 100.

In regard to case 3, it is well known that decided cerebral and spinal injury can occur without discernible evidence of fracture or dislocation.[8] A temporary luxation of the vertebral column may occur, which quickly returns to normal; but during the brief period of displacement severe damage to the cord is produced. Lifting of heavy weights may produce spinal injury.[9] It is possible that in case 3 the patient had spinal damage due to carrying a heavy piece of steel, but in any event manipulations appear to have been ill advised and may well have aggravated his injury.

SUMMARY

Two fatal cases of cerebellar injury and 1 fatal case of spinal damage following chiropractic manipulation are described in detail.

The 2 instances of localized cerebellar trauma with associated thrombosis of basilar and cerebellar arteries appear to be unique.

A possible mechanism for the production of such injury is described.

---

[8] Habig, J. M.: [illegible] cérébelleux avec syndrome du trou occipital, Br [illegible] (March 14) 1937. Echols, D. H.: Hematoma [illegible] of a Case, Univ. M. Hosp. Bull., Ann Arbor [illegible] Plewes, B.: Spinal Cord Injury Without Evidence of Fracture or Dislocation of the Vertebral Column, Canad. M. A. J. **38**: 475-477 (May) 1938. Davidoff, L. M.: Wounds and Injuries of the Spinal Cord, S. Clin. North America **21**: 433-441 (April) 1941. Grinker, R. R., and Guy, C. C.: Sprain of Cervical Spine Causing Thrombosis of Anterior Spinal Artery, J. A. M. A. **88**: 1140-1142 (April 9) 1927. Davison, C., and others: Trauma of the Central Nervous System, Baltimore, Williams & Wilkins Company, 1945.

[9] Jefferson, G.: Discussion on Spinal Injuries, Proc. Roy. Soc. Med. **21**: 625-637 (Dec. 6) 1927.

THE ELABORATION OF HISTAMINE IN VIVO

In the Treatment of Peripheral Vascular Disorders

A Preliminary Report

ZOLTON T. WIRTSCHAFTER, M.D.
and
RUDOLPH WIDMANN, M.D.
Beverly Hills, Calif.

Recently we repeated the work of Katz,[1] who reported the intravenous administration of diethyl ether for the treatment of impending ischemic gangrene and other peripheral vascular disorders. Twelve consecutive unselected cases of definite peripheral vascular disease were treated by this method. According to the usual criteria there was improvement in 5. In 7 patients pain was not relieved throughout the twenty-four hour period, and in 8 certain unfavorable reactions were noted (table 1).

Dale and Laidlaw[2] found that ether sensitized the capillaries to the action of histamine, so that but one tenth of the dose needed in unanesthetized cats was necessary to produce "histamine shock." Histamine is known to increase the acid secretion of the gastric juice, the blood plasma receiving the resulting alkaline factors, thus leading to the so-called urinary alkaline tide. In man, histamine produces dilatation of the arterioles, venules and capillaries. Drinker[3] states that "the possibility that histamine or substances like histamine may play a normal part in bringing about capillary dilatation, and with it an increase in permeability must be considered—especially so in view of the number of organs and parts of the body from which histamine has been isolated."

TABLE 1—*Distribution, Classification and Complications of Patients Treated with Diethyl Ether*

Case	Diagnosis	Presence of Gangrene	Complications* TI	TDI	J	B	GHC†	PG	Continuance of Treatment
1. P W.	Arteriosclerosis obliterans (diabetic)	None	—	—	—	—	—	—	Yes
2 J L	Arteriosclerosis obliterans (diabetic)	None	—	—	—	—	+	—	Discontinued after 3 days
3 O S.	Arteriosclerosis obliterans (diabetic)	None	—	—	+	—	—	—	Discontinued after 6 days
4 P M	Sudden arterial occlusion	None	+	—	—	+	—	—	Discontinued after 7 days
5 G K	Arteriosclerosis obliterans (diabetic)	4th right toe	+	—	—	—	+	—	Discontinued after 11 days
6 P V	Arteriosclerosis obliterans.	None	—	—	—	—	—	—	Yes
7 F M	Arteriosclerosis obliterans.....	None	—	—	—	—	—	—	Yes
8 G S	Acroscleroderma.....	None	+	+	—	—	—	—	Yes
9 B S	Arteriosclerosis obliterans	4th right toe	—	—	—	—	—	—	Yes
10 P N	Arteriosclerosis obliterans	2d, 3d and 4th left toes	—	—	—	—	—	+	Discontinued after 22 days
11 D H	Arteriosclerosis obliterans.	None	—	+	—	—	—	—	Discontinued after 12 days
12 W S	Sudden arterial occlusion	Entire right foot	—	—	—	—	+	—	Discontinued after 2 days

* TI, thrombosis at site of injection; TDI, thrombophlebitis distant from injection site; J, jaundice; B, bradycardia; GHC, gross hematuria or appearance of urinary casts, PG, progression of gangrene.

† Always preceded by a gradual but a steady rise of diastolic blood pressure during the intravenous infusion.

In the foregoing treated series, the treatment of 7 had to be discontinued because of major complications. Two of these and, of the remaining, 4 had among other tests interval checks of their gastric acidity, urinary p_H and carbon dioxide combining power during the administration of the diethyl ether solution. Table 2 presents the results observed.

The foregoing observations in some subjects (6, 8, 9) are not consistent with the currently accepted hypothesis for the occurrence of alkaline urine and suggests the possibility of a direct action of ether on the kidney. Serum obtained from patients during treatment produced wheals and flares on intradermal injection into normal, nonallergic subjects and caused contraction of the isolated guinea pig intestine. These findings suggested a histamine release during the period of diethyl ether administration.

In 1937 Holtz[4] reported the conversion of histidine to histamine in vitro by the action of ascorbic acid. To obviate all the complications of intravenous ether, we attempted to produce this reaction in vivo. Patients were first given 500 mg. of sodium ascorbate intravenously. This was followed by the intramuscular injection of 5 cc. of a 4 per cent aqueous solution of 1(—) histidine monohydrochloride simultaneously with the subcutaneous injection of 100 mg. of sodium ascorbate. Caution was taken not to give the latter two in the same location. The subsequent regimen consisted in giving the two organic compounds in the manner described every four, six, eight or twelve hours, depending on the severity of the clinical findings. In addition, patients received 600 mg. of ascorbic acid orally daily.

To demonstrate the presence of histamine, the serum and urine of the subjects on the regimen were injected intradermally into normal nonallergic individuals and in all cases typical and decidedly strong wheals and flares were produced. Control serums and urines produced wheals and flares of a very evanescent character. It is of interest that the resulting wheals and flares in 1 (—) histidine monohydrochloride-sodium ascorbate treated patients were of greater intensity and persisted for a longer time than those produced with serum obtained from patients treated with intravenous diethyl ether. In addition, both the serum and the urine of these patients caused contraction of the isolated guinea pig intestine. All but 1 of the individuals under this regimen (a patient with known gastric ulcer) showed an absence of free hydrochloric acid in the fasting specimen prior to treatment. Following the institution of therapy, the majority revealed the presence of free acid in the fasting gastric contents.

Eleven consecutive cases of definite peripheral vascular disease seen in the Peripheral Vascular Disease Clinic at the Wadsworth General Hospital, Veterans Administration, Los Angeles, comprise the subject of

---

From the Department of Medicine, Wadsworth General Hospital, Veterans Administration Center, Los Angeles

Some of the material used in this study was provided by the Lakeside Laboratories, Inc, the Armour Laboratories and Eli Lilly and Company.

This work would have been impossible without the encouragement and aid of Dr. Roger O. Egeberg, Chief of the Medical Service, Wadsworth General Hospital.

Helpful suggestions were made by Dr. B. O. Raulston, dean of the University of Southern California Medical School, Dr. William H. Leake and Dr. Edward R. Ware of the University of Southern California and Wadsworth General Hospital.

Miss Inga Brydahl, Charge Nurse, and the members of her staff in the ward rendered fine nursing care.

[1] Katz, R. A.: Impending Ischemic Gangrene; New Nonsurgical Therapeutic Suggestions, New Orleans S. J. 98:542 555 (June) 1946

[2] Dale, H. H., and Laidlaw, P. P.: Histamine Shock, J. Physiol. 52:355-390, 1919.

[3] Drinker, C. K., and Yoffey, J. M.: Lymphatics, Lymph and Lymphoid Tissue—Their Physiological and Clinical Significance, Cambridge, Mass., Harvard University Press, 1941, pp. 56 and 57.

[4] Holtz, P.: Histaminbildung aus Histidin durch Ascorbinsäure, Naturwissenschaften 25:14 (Jan.) 1937.

this preliminary report. All of these patients have up to the date of this report responded favorably to the therapy described and have not required amputations. The relief of intractable pain has been dramatic in the persons afflicted with it. It has occurred within six hours to three days after the institution of treatment.

Patients with gangrene, regardless of the cause, have responded most quickly; all have described a sensation of increased warmth in the affected limbs. This increase in temperature has been readily observed on examination. Extremities exhibiting black, shriveled, hard, mummified toes have shown areas of rubor in the affected parts forty-eight hours after the institution of therapy. In 1 case, that of a sudden arterial occlusion, exhibiting a black, hard, contracted, mummified foot with a definite line of demarcation at the ankle, areas of rubor appeared on the dorsum of the midfoot, the instep and the dorsal aspect of the first and second toes thirty-six hours after treatment was begun. Within two weeks the areas showing gangrene softened, filled out and began to desquamate the superficial, necrotic skin and to lighten in color. A return of function gradually appeared, though sensation has been slow in returning. All cases of gangrene exhibited a sharp, definite line of demarcation prior to treatment, though the surrounding areas were usually much inflamed. The regimen has caused the latter inflammation to subside and halted the progression of gangrene.

TABLE 2.—*Results Observed*

Case	Increase in Gastric Acidity: Free Hydrochloric Acid Only	Alkaline Tide	Carbon Dioxide Combining Power
6	None	+	Fall
7	None	+	Rise
8	+	+	Fall
9	+	+	Fall
10	+	—	Rise
12	+	+	Not tested

In the two instances of thromboangiitis obliterans studied, the response was rapid. The relief of pain, the sensation of warmth and an increase in temperature of the affected extremities were again observed.

The patients with arteriosclerosis obliterans without gangrene, and the remaining cases of sudden arterial occlusion responded similarly. The time required for the response was approximately twice that recorded.

We believe that the parenteral administration of 1(—) histidine monohydrochloride-sodium ascorbate is worthy of investigation, not only in peripheral vascular disease as such, but whenever the capillary loop is impaired and also when a collateral circulation is imperative for the repair of or reversal of the pathologic process. With such an end in view, the application of this regimen is now under investigation in this institution in coronary artery disease, angina pectoris, hypertension, glomerular nephritis, mesenteric thromboses, cerebral vascular accidents, Parkinson's disease, multiple sclerosis, thrombosis of the central retinal vein, Ménière's disease, migraine and eclampsia.

TABLE 3.—*Classification and Distribution of Eleven Patients with Peripheral Vascular Disease*

Diagnosis	No. of Cases	Presence of Gangrene	Presence of Diabetes
Arteriosclerosis obliterans	7	4	2
Thromboangiitis obliterans	2	0	0
Sudden arterial occlusion	2	1	0

Beverly-Lasky Medical Building, 201 Lasky Drive.

Special Articles

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

MORRIS FISHBEIN, M.D.
Editor, Journal of the American Medical Association and Hygeia, the Health Magazine
Chicago

(Continued from page 539)

(NOTE.—*Following is the seventeenth chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of THE JOURNAL. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in THE JOURNAL. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—ED.)

CHAPTER 17. *By Leaps and Bounds*

1902-1904

When Dr. Culbertson was editor, he had called to assist him a young relative by marriage named Will C. Braun. With the retirement of Dr. Culbertson, Mr. Braun remained as advertising clerk with a salary in 1898 of $1,500 a year. The value of the services of Mr. Braun, who advanced gradually to the position of Advertising and Circulation Manager and then in 1924 to the position of Business Manager of the American Medical Association, cannot be overestimated. He grew with the Association. At the time of his retirement in 1946 he had seen the annual income from advertising increase from under $10,000 a year in 1898 to $1,750,000 in 1946.

With the incumbency of Dr. George H. Simmons as editor, Will Braun became the editorial right-hand. Many of the most significant steps taken by the Association in the development of the periodicals, the exhibits at the annual sessions, the organization of the printing department and the headquarters office may be credited to his canny intelligence.

When the committee of three, headed by J. N. McCormack and including Drs. P. Maxwell Foshay and George H. Simmons, was assigned the task of reorganizing the American Medical Association, they met frequently in the Old Grand Hotel in Cincinnati with Dr. Charles A. L. Reed, who was then President of the American Medical Association. Cincinnati was chosen because it was one night's run for each of the other members from Chicago, Louisville and Cleveland. The drive of Dr. Simmons was tremendous; he kept the other two members of the committee constantly on their toes. From each of their meetings McCormack and Foshay returned home with a mass of notes, suggestions, emendations and other material over which they would work until the time of the next meeting.

At the meeting in St. Paul in 1901, as has already been mentioned, the general principles and policies outlined in the Constitution and By-Laws were presented and almost immediately adopted. Previous to the meeting the committee had prepared a preliminary report which had been serially published in THE JOURNAL. This preliminary report follows in condensed form; the entire present structure of the American Medical Association is built according to this plan:

THE HOUSE OF DELEGATES

The committee proposed that a business section should be constituted, to be known as the House of Delegates, which should proportionately represent the state societies in accordance with their numerical strength and with the addition as directly representative of the scientific work of the Association of one delegate from each section. It was suggested that the ratio of representation be fixed at one delegate to every 500 members. Later plans were established for reapportionment at regular intervals to meet the tremendous growth in membership and thus to avoid an overwhelming number of delegates in the representative body. The organizational committee indicated that opportunity would be afforded to every state to be heard in full and that there would be free debate. The states near the place of meeting would no longer wield a preponderating influence. The House of Delegates could work without interfering with the scientific work of the Association. The committee attempted to make this body truly representative, to provide against political combinations, against perpetuation in office, and against self election to office.

In order to elaborate a complete and effective scheme for uniting the medical profession, the committee suggested plans for the uniform organization of both state and county medical societies as being directly subsidiary to the plan outlined for the Association itself. The committee was convinced that its plan would weld the profession of the entire country into a compact organism whose power to influence public sentiment would be almost unlimited and "whose requests for desirable legislation [would] everywhere be met with that respect which the politician always has for organized votes."

Many of the fundamental changes incorporated in the original Constitution and By-Laws have remained intact since the day when this enlightened group prepared them. With the presentation, they offered an argument in behalf of the proposals which was so convincing that hardly a voice was raised against it. Nevertheless the committee pointed out that a similar committee had been established at the meeting of the American Medical Association in Chicago in 1887 by Dr. N. S. Davis and that the plan then proposed by Dr. N. S. Davis was just about the same plan that they were now proposing.

The committee clearly intended that the House of Delegates would be to all intents and purposes the legislative body of the Association. It elects all the officers, it has control of the affairs of the Association, it expresses in its resolutions the desires of the profession of the country in regard to business and legislative affairs. It is truly a confederation of the state societies of the country, which, in turn, are confederations of the local societies in the states.

The previous experiences in the representative body of the Association led the committee to the belief that political considerations must, as far as possible, be eliminated from the deliberations of the House of Delegates. It therefore wrote into the By-Laws a decision that "no member of the House of Delegates shall be eligible to any office in the Association." It was believed that by this provision medical politics would be reduced to a minimum.

The committee pointed out that the Board of Trustees would have control of the finances of the Association and would be considered officers of the Association. It was the desire that at least six of the nine trustees could be independent of the existing House of Delegates and be in a position to act independently as a protection should that body in any year recommend some extraordinary expenditure.

With remarkable foresight the committee suggested in those tender days that the secretary could be the editor of the Association and it said "While it is better under present conditions for several reasons that the editor and secretary be one, the time may come in the development of the work of the Association that the duties should be separated, and hence it is thought best to incorporate the matter in the Constitution as above."

The committee recommended also that all officers be ex officio members of the House of Delegates but none of them should have the right to vote except the President, and he only in case of a tie.

As the years have passed the wisdom of this group becomes increasingly apparent. It planned well. To its planning much of the great growth and power of the organization as it exists today must be accredited.

By 1906 the mechanism was functioning smoothly. By that time the Association had 60,000 members instead of the 11,000 members at the time when the new Constitution and By-Laws were adopted.

A SPEAKER FOR THE HOUSE OF DELEGATES

The committee on reorganization was even convinced unanimously that the House of Delegates should have its own chairman, one who would be selected for his ability to preside rather than for his scientific achievements or his popularity. It was felt that the office should be more or less permanent, since the man selected as speaker of the House of Delegates would be more likely to master parliamentary rules than would be the case if he were to preside for only one year. Many of the matters that arose in the House of Delegates were considered from year to year. A more or less permanent presiding officer would have knowledge of such matters. When it came to presenting the Constitution and By-Laws to the House of Delegates, however, the committee said that this question was too delicate and that it ought to be left to the members of the House to decide for themselves. Nevertheless one member of the Board of Trustees—Dr. Happel—felt that there should be a chairman or speaker for the House of Delegates and he introduced at a later date an amendment to the By-Laws to provide for this office. The introduction of the amendment caused resentment, and the chairman of the Board of Trustees was hissed. The proposal was regarded as an insult to the President of the Association, who was then presiding. In 1916 a By-Law was passed creating a chairman of the House of Delegates and in 1918 the word "chairman" was changed to "speaker."

The committee also failed to have the courage to eliminate some of the extra vice presidents; the Association continued for a number of years to have four vice presidents. The nomination of these four was always a considerable mental strain on the members of the House of Delegates. Finally in 1920 a new By-Law provided that there be only one vice president.

There were other minor incongruities in the By-Laws but over the years these were gradually eliminated. In fact, they continue to be eliminated, since a new revision of the By-Laws is contemplated for 1947.

PULLMAN CARS

The state of medical science in 1901 was not amazingly different from the medical science of the last ten years of the previous century. Among other things, pullman cars had come into use. Dr. J. N. Hurty, then health officer of the state of Indiana, had sent a letter to the American Medical Association for improved sanitation for pullman cars. He recommended the installation of a little basin and fountain so that people could wash their teeth without using the wash basin for that purpose. He recommended that the blankets be white, so that the users of the bed could have some personal knowledge of their cleanliness.

DEATH OF PRESIDENT MC KINLEY

THE JOURNAL had shown great concern because the physicians who had taken care of President McKinley at the time of his assassination had never been paid for their services and had not rendered any bills. The editor felt that Congress should make some sort of appropriation for them.

MEDICAL ABSTRACTS

Some of the Eastern periodicals were criticizing the quality of the abstracts in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION although these were far superior to those published in any other periodical. The editor called attention to the fact that he had not created the department of abstracts but that these had first been created by the *Münchener medizinische Wochenschrift* and that it had been the policy of the editor to make them better and better all the time.

WOMEN PHYSICIANS

Strangely, the editor of THE JOURNAL, harking back to the past, still felt that women could not hold much of a place in medical practice. He said "The whole question of woman's place in medicine hinges on the fact that, when a critical case demands independent action and fearless judgment, man's success depends on his virile courage, which the normal woman does not have nor is expected to have."

THE BOARD OF TRUSTEES

The Board of Trustees of the American Medical Association had been meeting regularly in the Grand Pacific Hotel in Chicago and again at the annual session of the Association. The minutes were kept by the secretary in longhand. The editor and the advertising manager (to which position Mr. Will C. Braun had now been promoted) were being employed year by year. The Association was purchasing linotype machines and a small press. The secretary was authorized to employ stenographers to report the meetings of the Association and to furnish blank forms for the use of officers of the sections.

By 1901 the new editor was beginning to have trouble with some of the advertisements. For instance, the California Fig and Syrup Company objected to being barred from THE JOURNAL; it was finally decided that the advertisements of the California Fig and Syrup Company be accepted provided the proprietor agree to conform with the rules and that the editor was satisfied that the company was not advertising in the lay press.

In the Board of Trustees meetings in the Grand Pacific Hotel apparently not all was salubrious. For instance, observe this statement from the minutes:

> After a general discussion the motion was withdrawn and notwithstanding the persistant [sic] and annoying clammer [sic] and protestations from a subordinate of the hotel for the possession of our present meeting room, for the use of some itinerant dinner party, it was decided to hold the fort, so to speak, and continue the deliberations until the business was finished.

Interesting also is a little note indicating that before the coming of Dr. George H. Simmons the financial affairs of the Association were being somewhat imperfectly administered.

> It was stated that no satisfactory report had been received in the matter of old checks, postal notes and money orders, reported some time ago to have been found mislaid about the office, and that recently some new ones had been discovered. Dr. Happel moved, seconded by Dr. Montgomery, that all such checks and postal notes be sent to the Finance Committee, and that all Post Office money orders be sent to Dr. Johnson at Washington, D. C., for collection, and the Editor be, and he is hereby directed, to furnish all information concerning the above to the members named.

NEW MACHINERY

By 1901 Dr. Simmons reported that he had bought a small press and had put individual motors on the folder, two small presses, and the stitcher, which relieved the strain on the large motor and facilitated the work. He reported that the circulation was steadily climbing each month and that he could truthfully say that THE JOURNAL had the largest circulation of any medical journal in the world. He was then printing 25,000 copies weekly. It was becoming obvious that THE JOURNAL would have to obtain its own quarters.

RESPONSIBILITY OF THE BOARD

The change in the Constitution and By-Laws raised legal questions as to the responsibilities and authority of the Board of Trustees as compared with the incorporated association. It was felt that it would be necessary to obtain legal advice as to the exact legal status of the organization—a question which was to plague the responsible authorities for a good many years to come.

One action taken by the Board requested the secretary-editor to print a complete list of men who had held offices in the Association either in the House of Delegates or in the sections, so that there might be equitable distribution of honors in the future.

Several members of the Board of Trustees began to be disturbed over their *financial responsibilities. It* was pointed out that the salary of the editor represented the interest of 6 per cent on $100,000 and that there ought to be a business committee of the board which would take full responsibility for the finances of the Association. This arrangement has been of the greatest possible value to the American Medical Association since that time. To the finance committees of the Board of Trustees must be given much of the credit for the favorable financial position of the Association as the years have passed.

TIGHT FINANCING

The Committee on Reorganization had been voted $400 for its expenses, but the total bills represented $416.89. This gave great concern to the Board of Trustees, which eventually decided to give $400 to the chairman and let him argue it out with the other two members.

1902

SARATOGA SPRINGS, N. Y.

In 1902 the Board of Trustees moved its meetings to the Sherman House, presumably because of the "clammer" in the Grand Pacific Hotel. When in that year the Board held its first meeting, the attorney who had been called into consultation to report on the legal status of the incorporation of the Association indicated that there were apparently two organizations in the same concern: the Board of Trustees, with one set of officers, and the American Medical Association and the House of Delegates, with their sets of officers; all of this taken together was not in accord with the corporation laws of the state of Illinois. The legal opinion was profound and the lawyer was willing to suggest a technic whereby an incorporation could be completed with just one corporate body with one president and one secretary. The Board of Trustees directed the attorney to prepare the necessary papers, make the necessary changes and cooperate with the Committee on Organization, to which the By-Laws as adopted had been recommitted with authority to make verbal changes.

MORE ABOUT ADVERTISING

Again there was a considerable discussion over the advertisements of the California Fig Syrup Company, and the representative of that agency agreed to stop advertising it in the lay press. Now came another step in the cleaning of the advertising; a rule was adopted that rules governing advertisement of internal remedies should apply also to the advertisement of external remedies. There were disturbances over the advertisements of Battle & Company's Papine. The editor was authorized by the Board of Trustees to edit the various advertisements with a view to keeping out objectional expressions regarding the efficiency of the products.

THE FIRST HOME

Dr. E. Fletcher Ingals, as resident trustee, had been looking into the possible purchase of property for the Association. He recommended a space on the northeast corner of Indiana and Dearborn streets being known as Nos. 95 to 103 on Dearborn Street and measuring approximately 80 by 100 feet. The canny members of the board used part of the buildings on this property and rented the rest, thus receiving enough money out of the rentals to carry a considerable portion of their expenses. Arrangements were made to look further into the purchase of property. Finally a resolution was passed by the Board that the American Medical Association have a flag which should be known as the flag of the American Medical Association and fly over the headquarters whenever the board was meeting. The services of Dr. E. Fletcher Ingals in the development of the first headquarters building and in its equipment have never been suitably recognized by the Association. To him must be given most of the credit for the purchase of the original property and the preparation of the plans for the first building.

The first meeting of the American Medical Association with its new House of Delegates was held in 1902. The transition, as has been pointed out by Dr. Simmons, was exceedingly smooth. The meeting was held in Saratoga Springs, N. Y., early in June.

Following his resolution to the House of Delegates, Dr. H. L. E. Johnson of Washington, D. C., presented a beautiful banner to the Association. Excellent addresses were made to the House by the speaker of the New York state assembly and by Senator Brackett of New York. The technic for the establishment of reference committees of the House of Delegates was not yet perfected; on the first day of the session a business committee was set up to consist of five members to which would be referred all resolutions after being read.

The President, Dr. Wyeth, suggested an organizer who should act as a national organizer of the profession and who could visit states or territories where as yet medical organizations and society work were practically neglected. This business committee was given the address of the President of the Association and also all the recommendations that he had made.

As secretary of the Association, Dr. George H. Simmons read an extensive report in which he indicated that the same committee that had developed the reorganization had been requested by the President to formulate a Constitution and By-Laws for the state medical societies. This had been done and several state medical societies had already adopted the uniform Constitution and By-Laws. Dr. Simmons urged that all members who were not affiliated with local and state societies be dropped from membership in the Association and that the new Constitution and By-Laws be rigidly enforced. This address was also referred to the business committee.

Then the Board of Trustees reported the great improvement in the affairs of the Association that had resulted from the new methods of organization. It was a little apologetic about the advertising. "To the ordinary JOURNAL reader, it would appear to be an easy matter to lay down an inflexible rule by which the advertising department of any publication should be governed—that this should be like the laws of the Medes and Persians—but when brought face to face with many propositions, it is found to be a very difficult matter to decide what to do in each individual case. The Trustees are endeavoring to eliminate from the pages of THE JOURNAL all advertising that could be considered objectionable from an ethical standpoint."

The trustees were concerned with the overwhelming number of papers for the various sections and the difficulties of providing adequate publication. Finally they reported to the House of Delegates their action in purchasing property for the Association, and their report also was referred to the business committee.

THE PRINCIPLES OF ETHICS

Next came one of the most important actions taken by the Association. It resulted from a resolution introduced by Dr. E. Eliot Harris of New York. He said:

> For more than a year some of the members of the council of the New York State Medical Association have been engaged in a critical examination of the ethical part of the laws of the American Medical Association, resulting in the preparation of a revision of the Code of Medical Ethics. This revision has been approved by the council of the New York State Medical Association, and the delegates have been instructed to present it to the House of Delegates at this session.
>
> *Resolved,* That the President appoint a committee of five to examine and report for final action at the annual session in 1903 the proposed revised code of medical ethics which is herewith submitted in writing;
>
> *Resolved,* That the proposed revised code of medical ethics be published in the Association's Journal three times before the meeting in 1903.

This was accompanied with the complete text of the new Principles of Ethics. These resolutions were referred to a special committee to be appointed by the President. The President appointed Drs. E. Eliot Harris of New York, William H. Welch of Baltimore, T. J. Happel of Tennessee, Nicholas Senn of Chicago and Joseph D. Bryant of New York.

REFERENCE COMMITTEES

Now the business committee on which had been wished the analysis of all the recommendations of the President, the Board and the Secretary and all of the new business, came back with a report that there be appointed instead a series of committees including one on sections and section work, one on revision of the list of members, one on finance, one on the relationship of dentists and pharmacists, one on organization, and one on transportation and place of meeting. This was adopted; it constituted the first step toward the establishment of suitable reference committees for the consideration of the vast business, which comes before each meeting of the House of Delegates of the American Medical Association. The committee recommended the apportioning of all the business that had been referred to them to these various committees.

REORGANIZATION

The committee on organization report was presented by Dr. P. Maxwell Foshay, who submitted a copy of the new Constitution and By-Laws as well as the constitutions and by-laws developed for the individual states. This committee also recommended that a national organizer be employed to assist in organizing and developing the medical societies of the country. The report of this committee was adopted; later an organizer was employed.

CONFERENCE ON LEGISLATION

Another important resolution introduced by the committee on legislation called for an annual conference on legislation affecting the medical profession to be held in Washington and to include representatives of the national organization as well as representatives of the individual states.

ORIGINS OF TWO COUNCILS

The business committee in a later report recommended the establishment of two additional standing committees to be appointed by the President of the Association. These were a committee on public health and a committee on medical education. From these groups came eventually the Council on Health and Public Instruction and the Council on Medical Education and Hospitals.

THE NATIONAL EXAMINING BOARD

At this time also came the proposal for a voluntary national examining board, an idea which had apparently originated with Dr. William L. Rodman of Philadelphia. The proposal was opposed by the confederation of Medical Examining and Licensing Boards.

DIVISION OF FEES

On the final day of the session a resolution was adopted against the division of fees, to the effect that any member detected in such misconduct be expelled from his county medical society.

SOLICITATION OF VOTES FOR OFFICE

Another resolution adopted by the House of Delegates of the American Medical Association in 1902 declared that *the solicitation of votes for office is not in keeping with the dignity of the medical profession nor in harmony with the spirit of this Association and that such solicitation shall be considered a disqualification for the election to any office in the gift of the Association.* The resolution then passed has never been repealed. Later the Judicial Council declared that it was also wholly inefficient in preventing the abuse it sought to control.

DR. FRANK BILLINGS BECOMES PRESIDENT

At this session of the American Medical Association, Dr. Frank Billings was elected president. He was from that time on to be one of the most important officers in the building of the Association. Indeed to him must be credited largely the making of peace between the two medical societies in the state of New York, thus giving the Association new strength and more power for the future.

QUERIES AND MINOR NOTES

At the meeting of the Board of Trustees of the American Medical Association held in July 1902, one of the trustees suggested to the editor the desirability of a section of The Journal to be devoted to questions and answers. This section of The Journal was carried on for some twenty years with a few answers per week. For the last twenty years it has developed into one of the most significant portions of The Journal of the American Medical Association. This department now requires the services of several workers in the headquarters office and represents annually consultations with 400 or 500 experts who supply the replies. The answers are paid for at a space rate, which in no way compensates the author of the answer for the knowledge and investigation required but which represents an expenditure of thousands of dollars each year—indeed often equal to the entire budget of The Journal for the first few years of the present century.

1903

NEW ORLEANS

The report of the Board of Trustees for 1903 indicates that it had been especially active in straightening out the matter of the incorporation. The editor was being overwhelmed with work and was therefore authorized to secure the services of Dr. J. N. McCormack of Kentucky as a traveling organizer. The board described the manner in which it had purchased the property and the necessary equipment for the headquarters office.

The editor presented the names of half a dozen "patent" medicines which were accepted by other periodicals but the Board of Trustees was firm in its insistence that these not be accepted to the pages of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. The Board of Trustees presented in toto the complete discussions relative to the articles of incorporation. There had been a considerable movement to cause the Association to incorporate in a national corporation under the laws of the District of Columbia. The attorneys did not recommend such an action.

The traveling organizer, Dr. J. N. McCormack, had visited Wisconsin, Florida, Mississippi, Texas and Arkansas, and Dr. Simmons himself had gone to Missouri. Their travels met everywhere with success; the membership of the Association had increased by three times; it was decided to continue these efforts.

The committee on the Rush monument, through the work of Dr. Frank Billings, had now assembled more than $15,000. It was decided to proceed with the setting up of the monument, and the Board of Trustees appropriated $500 to bear the expenses of the dedication.

FOURTH OF JULY ACCIDENTS

The quality of American medical literature had begun to show definite improvement. The papers in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION were of a distinctly higher order than in the previous decade. About this time the editorials began to call attention to the unnecessary injuries resulting from the celebration of the Fourth of July. Eventually THE JOURNAL developed a campaign which only late in 1940 began to have an appreciable effect. Today most of the states in the United States, as a result of the campaign initiated by THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION in 1903, have laws regulating the use of fireworks in celebration of the Fourth of July. While the number of injuries and particularly the number of cases of tetanus have greatly decreased, there are still some states which need to take definite action to *diminish these casualties.*

CAMPAIGNS

As an example, however, of the manner in which THE JOURNAL had begun to carry on a variety of campaigns, we must take into account the campaign against excessive injuries on the Fourth of July, the campaign for improvement of medical education demonstrated by publication in 1903 of the third annual educational number, and the campaign for better organization of medical societies indicated by the great advancement in county and state organizations. Moreover, the Association began to set aside a small sum of money to be devoted to grants for research. In an issue for 1903 appears the first paper published by a grantee.

In 1903 at New Orleans, the House of Delegates was greeted with floods of oratory by the mayor, a representative of the governor and a representative of the local bar association. No one better could have been chosen to respond to these addresses than the first vice president, Dr. J. A. Witherspoon of Nashville, Tenn., who later became President of the Association. His address was punctuated with "applause" and "laughter" in many parenthetical inserts that would have gladdened the hearts of such eminent speakers as Chauncey Depew and Joseph Choate. The concentrated attack on medical educational problems was featured by the address of President Frank Billings on "Medical Education in the United States."

The Association was presented with portraits of previous Presidents Drs. T. G. Richardson and Hunter McGuire.

In response to a resolution adopted the previous year, all business introduced was referred to the business committee without debate.

The committee on Scientific Research had selected four grantees who were investigating such subjects as the blastomycotic infections, streptococcic infections, malaria and the secretion of sweat.

More significant than the address by President Frank Billings on medical education was his message to the House of Delegates. By 1903 eighteen states had been completely organized in accordance with the plan of the American Medical Association. Dr. Billings recommended the continued employment of Dr. J. N. McCormack as official organizer. He was able to report that sufficient funds had been collected to construct the Rush monument and to promise its dedication before the end of 1903. A suggestion had been made for the establishment of a national bureau of medicines and foods, and a provisional committee had been established to consider this possibility. Out of these suggestions came the Council on Pharmacy and Chemistry.

The American Medical Association was also urged to prepare a memorial for Major Walter Reed, whose fundamental investigations of yellow fever made his name one of the greatest in the history of American medicine.

The business committee which acted as the sole reference committee for this session was concerned with the question of national incorporation for the American Medical Association. The subject was continued because it did not seem possible to make any definite recommendation.

Dr. Arthur Dean Bevan as chairman of the Committee on Medical Education made an extended report at this session which ended with the recommendation that a committee on education be established with a full time salaried assistant secretary and that they have their headquarters in the office of the American Medical Association. This was the origin of the Council on Medical Education and Hospitals.

An enlarged committee was set up to make a final revision of the Principles of Ethics, with representatives from each state on the committee. The President appointed such a committee.

The move to establish the national bureau of medicines and foods was not successful because the business committee rejected its suggestions. There was much discussion, in which Dr. Philip Mills-Jones of California led the movement in favor of such a bureau. Eventually it was referred back to the original committee.

THE REVISED PRINCIPLES OF ETHICS

On the fourth day of the meeting the enlarged committee on a revised Code of Ethics was called for a report. The committee included Dr. E. Eliot Harris, William H. Welch, T. J. Happel and Joseph D. Bryant. Their complete report as it had been worked out with the enlarged committee on the previous evening was read and on motion by E. Eliot Harris, seconded by Charles A. L. Reed of Cincinnati, the revised Principles of Ethics were unanimously adopted. The adoption of these new Principles of Ethics put an end to the controversy in New York, which had been for so many years the basis of contention. Once these new Principles of Ethics were adopted, the President of the Association, Dr. Frank Billings, and the organizer, Dr. J. N. McCormack, through meetings with representative physicians of the two groups in New York, brought about an amalgamation and the ultimate establishment of a single society in that state.

I am indebted to Dr. C. H. Bunting of Hamden, Conn., for this story as to how the revised Principles of Ethics were adopted at the New Orleans session in 1903. The committee of four already mentioned had developed a revision, to which, however, one of the members dissented. That member came to Dr. William H. Welch late in the afternoon before the House of Delegates was to meet and expressed his dissatisfaction with the committee report. Dr. Welch then agreed with him. After the motion to appoint a committee of representatives from the individual states. Dr. Welch retired to his room, took off his coat and, laying out the necessary number of long black cigars, went to work and wrote out in longhand the entire code. The committee got the code set in type and printed that night and a copy was on the desk of each delegate in the morning. As the delegates came into the meeting, Dr. Welch stood in back of the hall greeting them and telling them how much better he thought the minority report of the committee was than the original majority report. According to Dr. William Sidney Thayer, it was this lobbying of Dr. Welch for his own handiwork that resulted in the eventual unanimous adoption of the report on the Principles of Ethics.

ANOTHER STEP TOWARD THE COUNCIL ON PHARMACY AND CHEMISTRY

Later in the session Dr. Ellis of California presented a report for the provisional committee on the establishment of a national bureau of medicines and foods. That suggestion had first been made by Dr. F. E. Stewart at the session of the American Medical Association held in 1881. Dr. Ellis proposed that a national organization be formed with representatives of the American Medical Association and of the American Pharmaceutical Association to examine and analyze new remedies and to make certain that labels were truthful and that claims were warranted. The proposal was referred back to the business committee, which now recommended that this committee confer with the American Pharmaceutical Association and with the authorities of the United States and report at the next session.

BIRTH OF "TONICS AND SEDATIVES"

On Aug. 15, 1903 THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION published for the first time a column immediately following the editorial section with the heading "Clippings from Lay Exchanges." This was a column of peculiar errors made by the press in discussing medical subjects. It was to appear from time to time in the reading pages and then gradually shifted toward the advertising section of THE JOURNAL. Eventually it was to become the Tonics and Sedatives department, a section of medical humor which has come to be recognized as a unique feature of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Toward the end of the New Orleans session of 1903 the business committee which had been charged with passing on most of the active functions of the Association uttered a word of warning on what it regarded as excessive legislation. "In the past," it said, "when so little could be done, sufficient was accomplished from year to year to keep the Association abreast of the development of the profession. At present we are threatened with just the opposite danger, namely, legislation on a great variety of topics, in which the energy of the Association will be dissipated and very little accomplished. It seems to your committee that the organization of the profession, the strengthening of THE JOURNAL and the welding of the profession into a unit are subjects that will profitably occupy the energies of this House for some years to come."

THE NATIONAL CHARTER

As the year went on there continued to be agitation for the securing of a national charter for the Association, and there were many who still believed that incorporation with a national charter would be desirable. In the meantime the former Committee on Constitution and By-Laws had been changed to a new committee with Dr. M. L. Harris of Chicago as chairman. The report of this new committee was adopted so that the Association had a new Constitution and By-Laws which, with minor modifications, prevails to this time.

VENEREAL DISEASE

The American Medical Association had developed a powerful committee on the prevalence of venereal diseases. This committee presented an extensive report on the prevalence of such diseases. This committee cooperated with other agencies in endeavoring to work up a plan for the suppression of venereal disorders. Until, however, modern scientific medicine developed such aids as the Wassermann test and specific methods of treatment which would control syphilis in a reasonably short time, the outlook for stamping out venereal diseases was not particularly bright.

MORE RESOLUTIONS

Notwithstanding the warning of the business committee, resolutions were introduced to the House of Delegates on a great variety of subjects such as the purification of the mails by the elimination of advertisements for "patent" medicines, on condemning the use of wood alcohol as a dangerous poison, on the control of leprosy, on venereal diseases, on cancer, on the concept of a central committee which would act in an advisory capacity to medical periodicals in purifying their advertising, and on a great number of subjects dealing with the intimate affairs of the Association.

THE DIRECTORY

About this time also a proposal came before the House of Delegates for the publication by the American Medical Association of a directory of the medical profession. A commercial directory was being published in the United States and was supported largely by the sale of advertising space to the same type of proprietary and "patent" medicine advertising that was supporting a considerable number of medical periodicals of the nation. It was the belief of Dr. George H. Simmons and the Board of Trustees of the American Medical Association that it would be desirable to publish a directory which would be free from this unsavory commercial taint and which would be free as well from the promotional blurbs of individual physicians who were not averse to putting their best foot forward in the description of themselves and their activities which they sent to the commercial directory.

The Board of Trustees authorized the editor, Dr. George H. Simmons, to make the necessary investigations and to take the necessary steps toward the development of such a directory. This activity was eventually to bring down on the head of the editor a burst of vilification and personal attack almost unprecedented in the annals of journalism and certainly up to that time unprecedented in medical journalism.

The work of the organizer, Dr. J. N. McCormack, was being continued and insinuations began to be made against him on the charge that he was exploiting the Association. The publishers and editors of medical periodicals which were beginning to see their incomes suffer from the loss of advertising revenue joined in the chorus of attack on the editor. These attacks spread finally to direct assaults on the authority and honesty and the motivations of the members of the Board of Trustees. Moreover, the work which burdened the editor had begun to be insuperable with the growth of the Association, the establishment of a headquarters office and the ownership of a considerable amount of property, both real and mechanical.

One of the charges made against Dr. J. N. McCormack had to do with the fact that he "had been active in the politics of the Association while acting as organizer, and complaints had been presented to the Board of his active work in behalf of special candidates for Association honors."

An attempt had been made on recommendation of Dr. M. L. Harris to get the House of Delegates to select the Northern Trust Company as treasurer for the Association. With this proposal the House of Delegates disagreed and Dr. Frank Billings, a former President of the Association, was then nominated treasurer and elected by the House of Delegates. This was fortunate, because it enabled Dr. Frank Billings as treasurer to sit with the Board of Trustees for many years to come. His influence, his wisdom and his force were to be great assets to the American Medical Association during this period in its development.

1904

DEATHS OF PHYSICIANS

In the issue of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for Jan. 9, 1904 an editorial was published on the deaths of physicians. This was apparently the first summary of the deaths of physicians —a feature that has come to be an annual feature of THE JOURNAL. It has received frequent notice in the public and medical press throughout the nation and, indeed, throughout the world. It is a natural outgrowth of the directory service and the efforts of the American Medical Association to maintain an adequate accounting of the medical profession of the nation.

ATLANTIC CITY, N. J.

The organizer, Dr. J. N. McCormack, reported that he had already visited Wisconsin, Florida, Louisiana, Mississippi, Texas and Arkansas and that Dr. Simmons had gone to Missouri. The Board of Trustees agreed to retain his services for another year.

A bill was presented to the trustees in favor of the American Printing Company for $16 for printing the Principles of Medical Ethics, which had been given to them by Dr. William H. Welch.

A suitable button was adopted as official for the American Medical Association.

At this time it was apparently the chief function of the Board to concern itself simply with expenditures and not at all with policy. Early in 1904 the Board of Trustees met in Chicago for a regular session. It was first concerned with the income of the Association from the conduct of THE JOURNAL and from other sources. During the year THE JOURNAL had been exceedingly careful in its past selection of advertisements and had rejected advertisements of:

Etna Chemical Company
Duffey Malt Whiskey Company
Mariani & Co.
Oppenheimer Institute
California Fig Syrup Company
Scott & Bowne
Charles Marchand
The Fitchmul Company
Antikamnia Chemical Company
New Animal Therapy Company
Mueller Chemical Company
The Manola Company
Micajah Company
Anasarcin Chemical Company
Osborn-Colwell Company
The Pheno-Bromate Company
New York Pharmaceutical Company
The Ringgold-Reinhart Company
C. W. Edison
Opticulin Company
Gonoseptone Company
Asthma Remedy Company
Bellbrook Sanatorium
Merrill-Hall Company
Carl Reinschild Manufacturing Company
A. S. Valentine Chemical Company

These were rejected because they were considered to be secret proprietaries, but a few others were rejected because they were advertised primarily to the public. The editor pointed out that most of these advertisements had been accepted by other medical journals in the United States.

As a result of the work of organizers and solicitors, more than 5,000 new members had joined the Association. The Association had accumulated much machinery in its own office. The profit of THE JOURNAL now had reached more than $50,000 annually.

Once the Association had begun to buy property, the trustees determined to extend their holdings; arrangements were made to buy additional houses on Indiana Street, now known as Grand Avenue.

Dr. Charles A. L. Reed as chairman of the Committee on National Legislation (to be discussed later) was given a considerable grant for the expenses of his meetings, but he was told by the board that he could have his stationery printed in the office in Chicago.

There was still much debate as to whether or not the Association ought to have a national incorporation.

PRESIDENT JOHN H. MUSSER SPEAKS

At the meeting in June 1904 in Atlantic City, Dr. John H. Musser devoted his presidential address also to medical education.

THE REFERENCE COMMITTEES

Dr. Frank Billings in an opening address to the House of Delegates presented for the first time a definite plan of organization for reference committees. He pointed out that the business in New Orleans had been greatly delayed by the fact that every proposal had to be submitted to the business committee. He proposed therefore a system of reference committees—eight in number—which prevail to this day, except that the speaker of the House of Delegates is now empowered by the House to appoint additional reference committees if there are special projects to be considered.

THE COUNCIL ON MEDICAL EDUCATION

The committee on medical education now made a definite proposal for the establishment of a Council on Medical Education to consist of five members. The history of that council and its efforts from this time on is covered in the history of the Council on Medical Education and Hospitals, which appears in this volume, written by Dr. Victor Johnson, its present secretary.

THE "PATENT" MEDICINE EVIL

The "patent" medicine evil had developed so seriously that a resolution came in by Dr. H. O. Walker of Michigan, representing the Michigan State Medical Society, requesting the Board of Trustees of the American Medical Association to provide for the analysis of medicinal products of unknown composition and undetermined effects and to publish the results in THE JOURNAL, and requesting also the establishment of a commission which would administer this function. This motion was referred to the provisional committee on establishment of a national bureau of medicines and foods. When this committee reported the results of its conferences with Dr. Harvey Wiley (then chief of the Bureau of Agriculture) and with representatives of the American Pharmaceutical Association, its report was again referred to the committee on legislation.

The report for the establishment of a national bureau failed of adoption after an extended discussion in the House of Delegates sitting as a committee of the whole. As a result, official action was not taken by the House of Delegates, but we shall see that the effects of the pressure brought about by the discussion were sufficient to cause the Board of Trustees to take an action later which resulted in the establishment of the Council on Pharmacy and Chemistry.

THE RUSH MONUMENT COMPLETED

The committee on the Rush monument reported that the monument had now been erected on the grounds of the Naval Museum of Hygiene and Medical School in Washington, D. C., and that plans for the dedication on June 11, 1904 were complete.

(To be continued)

GROUP INSURANCE AS IT AFFECTS THE PHYSICIAN

H. MAYNARD REES, M.D.
Research Director, Medical Services Insurance,
John Hancock Mutual Life Insurance Company
Boston

Group insurance is the outgrowth of the interest of American employers in the welfare and economic security of their employees. That such an interest has paid dividends in better employee relations and in greater industrial efficiency does not detract from the credit due those who developed this forward looking policy. Today labor is no less persuaded of the advantages of this type of insurance than is management. It would seem, therefore, that this institution deserves the support of all who are concerned with solving these problems.

This article proposes primarily to present group insurance to the medical profession on this premise, namely: that while it is not by any means a panacea for all the people it is a highly successful solution of the quest of the average workingman and woman for basic protection against the principal hazards of life.

Detailed examination of the principles on which group insurance is founded would be tedious and unproductive for the purposes of this presentation. All that can be attempted here is the discussion of a few of its most salient features and problems, with particular reference to their impact on the practice of medicine and related institutions in the field of health care.

In the first place, there is a three-cornered relationship between the employer, the employee and the insurance carrier which sets this type of insurance apart from the traditional two party contract. This was early recognized by government supervisory authorities with the result that special legislation now exists in many states which defines and regulates this field. Within the framework permitted by law, the private insurance companies who write this type of coverage have learned from experience what constitutes good group underwriting and have developed rules and limitations of their own. First and foremost, however, it should be remembered that legal definitions do exist and that they direct the conduct of the business.

One of the most important of these has to do with the minimum number of which a group can be composed and also with the percentage of a given group who must be enrolled. It is sometimes thoughtlessly urged that these barriers should be lowered so that the advantages of this protection may be extended indiscriminately to any collection of persons, and even to single individuals. When we consider the fact that no medical examination or history is required, it will readily be seen that if personal choice were the only determining factor in the composition of the "group," there would be a strong tendency for those who suspected that they were about to need these benefits to enroll in greater numbers. The theory of group insurance, on the contrary, is to preclude selection against the company and to rely on the adequate operation of the law of averages.

As a matter of fact, group insurance is a boon to those substandard or elderly persons who normally are to be found in every employed group, by permitting them to obtain protection at the same price as their associates. They should, however, not exceed the usual distribution of such risks in the average industrial group. When unusual circumstances, as, for instance, employment conditions during the war years, alter this normal composition, the experience is such as seriously to disturb both the basis of rates and the methods of administration.

In group insurance, risks are classified and a premium is fitted to each class which will fairly reflect the experience of that class. This is accomplished in several ways, including dividends and merit ratings, and it represents not only an answer to competition but also an incentive for prevention of the hazard and self-policing of abuses. In this latter respect it has proved effective in holding down losses with resultant savings to both the insurer and the insured.

Persons who are not members of properly constituted groups within the law are not without protection, however. A variety of policies other than group have been developed by private insurance companies, as well as by plans sponsored by hospitals and physicians, for these persons. They contain certain safeguards against exploitation of the carrier. This is typical of American enterprise in its ingenuity in meeting the needs of unstandardized minorities.

Another feature of group insurance is its remarkably low cost. There are three reasons for this which deserve at least passing notice. In the first place, as already noted, the insured group is free from adverse selection; hence the occurrence of accidents or illness will follow closely their normal incidence. Secondly, since the group represents persons and their immediate families who are for the most part in the prime of life, both morbidity and mortality rates are low.

Finally, there is the fact that administrative expense has been pared to the bone. Where solicitation does not have to be made on an individual basis, selling cost is low. Since, as a rule, no medical examination is necessary, there is an additional saving. A single policy is issued with resulting economy in accounting, premium notices and all other paper work. Finally, premium collections are not the problem that is present in the case of the individual holder of a small policy. From this will be apparent the reasons why a proper group is defined as one the members of which are employees of a common employer or, as permitted in some states, the members of which have set up an organization which can act for them in the same direct and efficient manner.

Let us now examine what the hazards are which may be covered by group insurance. The workingman's idea of health insurance is not confined to providing hospitalization and the payment of physician's bills. He believes himself also entitled to a cash payment on which his family can subsist while he, the breadwinner, is incapacitated. He has a very understandable concern over the fate of his family in the event of his sudden death or disablement from a crippling accident or illness, all hazards from which insurance can, and does, give a measure of financial relief.

How much can the average worker spare out of his wages to pay for each of these protections? The amount is determined by a number of factors, none of which is directly within the power of the physician, the hospital or the insurance company to control. It is frequently argued that many frivolous expenditures preempt a wholly disproportionate amount of the worker's budget and that he could well afford to set aside a greater sum with which to purchase protection from the serious hazards of life. No doubt in many cases this is true, but how is a wiser allocation to be brought about?

Compulsion is one method, but it has serious drawbacks. Education is sounder but slow in producing results. Industry in many instances has seen fit to contribute increasing amounts toward providing the benefits of group insurance, thereby reducing the anxiety and increasing the welfare of the employee.

The physician as the purveyor of services which are essential to the whole structure of health insurance is naturally concerned over the full use of these services and their proper remuneration. The same applies to the hospital. It is quite understandable that each of these vital services should see its own particular contribution as of paramount importance and should occasionally lose perspective in the matter of the percentage of the workingman's income which can be diverted to health insurance.

Perhaps some comfort can be derived from the knowledge that the health coverages do not present the only problem in the allocation of the insurance fund. Although the primary object is to protect the employee during the active period of his life and thereby increase his productivity, nevertheless an increasing number of employers recognize an obligation to the worker who has grown old in their service which contributions to federal Old Age and Survivors' Insurance have not wholly liquidated. Retirement plans frequently involve, in addition to a pension, the continuation of some life insurance and even of hospitalization and medical care. Since the fund earmarked for welfare is never unlimited, each decision in such a program affects the amount of premium available for every other type of coverage.

Insurance companies do their best to advise that the "group package" contain a well balanced distribution of premium income, particularly when they are consulted in time to set up an integrated program. Beyond this they cannot go; nor does it seem likely that pressure from any organization specializing in hospitalization or medical care insurance will alter the fundamentals of the situation.

However, physicians and hospitals can take certain steps to streamline their services and thereby increase their insurability. The first of these would be some standardization of charges.

There is certainly no desire on the part of insurance companies either to control or to standardize hospital care, it being the province of the physician to determine what diagnostic and therapeutic procedures are necessary to his patient. If, however, hospitals would become coinsurers to the extent of reducing their charges to an inclusive daily rate, whether this were a flat rate or one graduated downward after the first few days, they would thereby create a known quantity against which it would be much easier to insure. In most cases, both the employer and the carrier desire to provide adequate protection, but with the present prospect of unpredictable extra charges there does not appear to be any scientific way to underwrite it.

A standardized table of relationship for surgical procedures would be the first step toward the same result in the field of surgery. Such a table in itself would imply no monetary value but would fix the relative importance of different operations and would be an improvement over some of the schedules now in use.

It is doubtful that this step alone would be sufficient to protect the individual or to satisfy public opinion. It would probably have to be coupled with some obligation on the part of the medical profession to accept a scale of dollar values applicable to such a table. Because of the inertia which opposes any change from a customary standard and despite the fact that average surgical schedules now being adopted are somewhat higher than formerly, it would take time to sell management on the necessity for higher aggregate scales than those now current in different parts of this country.

If, therefore, one assumes that for the present average surgical benefits would remain about the same, the question arises as to the segment of the population from whom they should be accepted as full compensation for the services rendered. Whether or not the most equitable or the most practical solution would be a fixed income limit for the employee is a moot question. Without underestimating the difficulties involved in arriving at such limits, it is a fair statement that at present this provision is in some disrepute owing to the low ceilings set by certain medical society-sponsored plans.

It is by no means outside the realm of possibility that a pledge given by the physicians to their own society, and duly publicized, to accept such fees from persons whose only resources for all practical purposes were their insurance benefits would be acceptable to the American people in view of the high esteem in which the members of the profession are generally held. One thing, at least, is certain: this second step toward uniformity would be of inestimable assistance in bringing about more general acceptance of insurance for surgical and obstetrical care.

The objection can justly be raised that such a schedule of fees would represent a considerable sacrifice on the part of at least some surgeons. This is no new development in the practice of medicine from the time of Hippocrates to the present day. Would the physicians really want to see home, office or hospital care put on a "hard-boiled," fixed price basis? We think not. This is not a plea that physicians should permit themselves to be exploited; rather, it is the expression of a conviction that private philanthropy still has a place in the social order. It must be exercised courteously and ungrudgingly toward the person whose economic status permits of only a modest scale of insurance.

Mention was made at the beginning of this article of the self-imposed limitations required by good underwriting. They are not preconceived or hard and fast, being more in the nature of brakes on a continuous evolution. If insurance companies are cautious about entering unexplored fields, it is because of a natural desire to be very sure of the result before hazarding too large a commitment. Experimentation on a small scale, however, goes on all the time.

The problem of insuring the costs of general medical (i. e., nonsurgical) care is one such field and presents many difficulties not found in surgical expense. The greatest of these is the fact that a simple visit to the physician can by no stretch of the imagination be considered a contingency in which the insured suffers any loss or discomfort other than the payment of a small fee; nor is it outside his control. The physician, as well as the insurance carrier, is helpless to prevent an unwarranted use of his time. For every early visit that might discover some hidden condition or early treatment shorten the course of the disease, it is a fair assumption that several times as many valuable hours would be spent in futile consultation with the malingerer and the neurotic.

Restricting such coverage to hospitalized patients would not seem to be either a permanent solution or one which is in the best interests of the public health. There is a very real danger of creating an unnecessary demand for hospital beds. Such a demand interferes with the care of the truly sick.

With regard to medical care in the home and in the physician's office, safeguards for the most part have taken two forms: the restriction of coverage to the employed person who presumably would lose some of his pay, especially when the added requirement of "total disability" is stipulated, and the provision that the first few visits be paid for by the individual. More liberal provisions must wait on the development of a greater body of statistical data which is now in the process of accumulation, for until every effort has been made to reduce the risk to one susceptible of measurement with a close degree of accuracy, employers, insurance carriers and physicians alike would only be making the problem cumulative by offering an ill conceived plan of protection. The result would be a subsidy to inefficiency rather than the insuring of a risk.

In the meantime, the medical profession may be able to speed the solution of this problem by evolutionary changes in the organization of their practice. It is perhaps significant that a committee of medical men who studied the question, and whose report is the basis of an interesting experiment in community health, stated that the insuring of comprehensive medical care must be predicated on the development of group practice among doctors. It is not within the province of this article to discuss the validity of this thesis, but a broader generalization might be in order. This would be that whatever conduced to a more centralized responsibility in the treatment of illness as an entity would, of necessity, tend to regularize the average experience and hence increase its insurability.

With legislation already passed in two states and impending in several others, the question of providing cash payments in lieu of wages lost during illness becomes of prime importance. The different methods of providing such benefits are outside the scope of this discussion, but one fact emerges which challenges the medical profession to rise to even greater heights of social responsibility. No matter what system is espoused, the physician remains the final arbiter as far as eligibility of the individual is concerned. While this type of protection is justified as a means of keeping the family together in the event of true disability, there is no question but that it acts as a sore temptation to many. One hope of holding the whole system of disability benefits within bounds depends on a high order of medical certification.

The insurance company is also under heavy moral obligation. It is the custodian of a fund contributed in most cases jointly by the employer and the employee. To the extent that it is unfairly exploited by one claimant, the expense of providing benefits for all the participants will be raised. Adverse experience must be borne by the carrier in any contract year, but will certainly be taken into consideration in subsequent renewal years. Premiums must be in relationship to claims.

It is possible that in some cases too much has been expected of the physician in the way of decisions as to the competence of his patient to perform the "regular or customary duties of his occupation." While the physician must bear a peculiar responsibility in this matter, his path can be made easier by a well coordinated and smoothly functioning claims administration. Lay investigation is needed to supplement the colored history which is occasionally given to the physician by the malingerer. Examination by a disinterested colleague will frequently relieve the embarrassed family practitioner of making an adverse decision in a questionable case. Add to these the exercise of patience and tact by all concerned, and the determination of "total disability" should soon offer no more of a problem than the reporting of a communicable disease.

Insurance forms, because of their importance as a potential irritant in the relations of all insurance carriers with the physician, deserve to be treated in some detail.

In the first place, standardization of group insurance claim forms by all carriers would undoubtedly do much to mitigate the physician's very human aversion to paper work. A familiar routine loses much of its formidable aspect, requiring less time and concentration to perform. Secondly, the questions asked should be clearly stated. There should be few questions which, either by reason of their subject matter or by reason of their phrasing, cannot be answered positively and fully. If the answer can only be a matter of the physician's opinion, then the question should be so phrased.

There is, however, no excuse for the occasional attitude of physicians that certain vital information is "none of the insurance company's business." A carefully prepared form should not ask for any data which are not essential to the evaluation of the validity of the claim, and, by the same token, the patient in applying for coverage should understand that he renounces to the same extent the privileged nature of his communications to the physician. The legal status of the information to which an insurance company is entitled is clearly established. Naturally, such information will receive as confidential treatment by the company as the physician could possibly wish. Not even the diagnosis should be revealed to the insured if the physician so instructs and communicates it directly to the claims department.

Surgical nomenclature causes many headaches in claims departments. There is no standardized classification of operations in general use today, but one is available. In 1942, the American Medical Association published a revised edition of the "Standard Nomenclature of Diseases" to which was added for the first time a "Standard Nomenclature of Operations." Its universal adoption would assist both in settlement of claims and in coding for statistical purposes. Meantime, the surgeon who describes his exact procedure as well as giving it the name of some relatively obscure patron can save himself from much correspondence and his patient from delay in receiving the proper indemnity.

Finally, the physician's promptness in filling out and returning forms may make all the difference between a satisfied claimant and one who considers himself badly treated. Even if the physician feels no great urgency about collecting his fee, the average worker is disinclined to resort to his emergency fund. Hence it is a vital matter to him to receive his weekly indemnity without delay when his wages are interrupted.

The treatment of the subject of this paper has of necessity been confined to a few highlights. Some problems of the group form of insurance have been outlined, but little has been suggested as to their solution. It is felt that this latter aspect should be reserved for the committees, now functioning jointly, of the insurance industry and the American Medical Association. Representation on these committees has been assured every branch of health insurance, from the private company to the physician-sponsored plans. Their formation marks a great forward step.

The cooperation of the physicians is recognition of the importance of the insurance principle in modern economic life and of the desirability of speeding the day when every person in this country will be financially protected against the major hazards of life as fully as his circumstances permit. There is room in such a joint endeavor for every type of organization which can demonstrate its social fitness.

SUMMARY AND CONCLUSIONS

Group insurance is particularly suited to the protection of the employees of industry and their dependents from the major hazards of life. It goes beyond the question of hospitalization and physicians' bills, which contingencies must be considered in their proper relationship with such other hazards as death, loss of earnings in time of illness and retirement. Such a program requires careful allocation of the total premium available for insurance in any given case.

There are certain areas of group coverage which especially touch the practice of medicine and which present problems as yet unsolved. These include certification of disability in cash sickness compensation; improvement of schedules of surgical fees; reduction of general medical care to an insurable risk; simplification and possible standardization of claim forms.

Group insurance is continuously progressive, with active experimentation going on at all times. The solution of some of its problems must await the accumulation of experience. Others are susceptible of joint study with the medical profession.

Cooperation between the insurance carriers, including both the private companies and the plans sponsored by physicians and hospitals, and the American Medical Association gives promise of bringing about the speediest and most satisfactory coverage for all the people.

Clinical Notes, Suggestions and New Instruments

VOLVULUS OF THE ASCENDING COLON WITH REPORT OF CASE

O. CHARLES ERICKSEN, M.D.
and
RUSSELL E. GREENFIELD, M.D.
Sioux Falls, S. D.

The medical literature is studded with cases of volvulus of the colon. For examples, Perlman[1] reported 111 cases from a Russian clinic, Griffin, Bartron and Meyer[2] discussed 37 cases in patients admitted to Cook County Hospital between 1937 and 1945, and Braun and Wortman[3] listed 31 cases seen at Friedrichshain Hospital in Berlin.

When the incidence of volvulus is applied to the various regions of the colon, however, these statistics take on a new significance. The large majority involve only the sigmoid flexure. Volvulus of the cecum, on the other hand, is much less common and when it occurs it is usually associated with volvulus of the terminal ileum. Up to 1913, Bundschuh[4] could collect only 110 cases from the literature. Wolfer, Beaton and Anson[5] were able to add another 194 cases in 1942. Sweet[6] states that in a series of 520 cases of bowel obstruction reviewed by him, only 1.15 per cent were due to volvulus of the cecum.

---

[1] Perlman, J. J.: Klinische Beitrage zur Pathologie und Chirurgischen Behandlung des Darmverschlusses, Arch. f. klin. Chir. **137**: 245-264, 1925.

[2] Griffin, W. D.; Bartron, G. R., and Meyer, K. A.: Volvulus of the Sigmoid Colon, Surg., Gynec. & Obst. **81**: 287-294, 1945.

[3] Braun, W., and Wortman, W.: Der Darmverschluss und die sonstigen Wegstoerungen des Darmes, Berlin, Julius Springer, 1924.

[4] Bundschuh, E.: Volvulus of the Cecum, Beitr. z. klin. Chir. **85**: 58-90, 1913.

[5] Wolfer, J. A.; Beaton, L. E., and Anson, B. J.: Volvulus of the Cecum, Surg., Gynec. & Obst. **74**: 882-894, 1942.

[6] Sweet, R. H.: Volvulus of Cecum, New England J. Med. **213**: 287-293, 1935.

When the ascending colon is considered, it appears to possess almost complete immunity to volvulus. Rothman, Bruckner and Zetena[7] described 1 case in 1943, but it was the only case we were able to find in recent literature. This paper will add a case to that of Rothman and his colleagues and will attempt to explain the extreme rarity of volvulus of the ascending colon by contrasting it to that of the sigmoid flexure and discussing the etiologic factors operating in the pathogenesis of volvulus in general.

The case reported by Rothman, Bruckner and Zetena had certain points of interest. The cecum of their patient was found in the left upper quadrant of the abdomen. Such extensive abnormal anatomy would indicate either a lack of fixation of the entire ascending colon with an extremely long ascending mesocolon or, more likely, a congenital maldevelopment such as that occasionally found in the newborn. Embryologically the cecum and ascending colon pass through four stages. In chronologic order they are migration, rotation, descent and, finally, fixation to the dorsal wall. It seems probable that in the case under discussion[7] the ascending colon had failed to rotate and descend; consequently, it had at no time been in a normal position. Certainly fixation had never occurred. If such a maldevelopment did exist, it is not hard to understand why the patient exhibited an acute obstructive volvulus when brought to surgery. It is really more difficult to understand how the patient could live forty-one years before the acute obstructive phase developed. In the case to be reported by us the patient did not have such a maldevelopment.

Faulty fixation of the ascending colon is a common anatomic variation. Chalfant[8] estimated that definite mobility of the right side of the colon is present in approximately 20 per cent of persons of all ages. Certainly, then, mobility alone is insufficient to cause volvulus of the ascending colon as it appears to do frequently in the sigmoid flexure. The consistently mobile small intestine is further evidence that mobility per se does not commonly cause volvulus. Apparently the mobility must be of a special type, or a second etiologic factor *must act with* the mobility, before volvulus results.

In discussing the relationship of bowel mobility to volvulus, it is readily seen that the bowel not only must be free to move from side to side but also must be free to rotate on its attachment. To encourage volvulus, the ideal attachment of the mesocolon to the dorsal wall is a fixed point rather than a line. Ascending mesocolons have a relatively long line of attachment and are rectangular in shape. Therefore even though the ascending colon is quite mobile, its mesocolon is so constructed that the mobility allowed the colon is mainly linear and not rotatory. Thus the mobility is of the wrong type and twisting is prevented. If the ascending mesocolon were fan-shaped, as is the mesosigmoid, volvulus could occur more readily.

Directly related to the anatomy of the mesentery as an etiologic factor in volvulus is the degree of bowel redundancy. If the intestinal segment is kept straight by the tension exerted on it by the immediate distal and proximal parts of the bowel, volvulus is prevented. To illustrate hypothetically: give a structure such as the esophagus a foot-long, fan-shaped mesentery and allow adequate room for mobility by removing all adjacent viscera in the thorax. The pharynx on one end and the stomach on the other would keep the esophagus stretched taut and prevent volvulus. The ascending colon tends to present a comparable picture with the cecum and hepatic flexure holding the ascending colon stretched out between them. The sigmoid colon, however, offers the opposite condition. The average adult sigmoid is 40 to 50 cm. long. It is attached through its mesentery to a line on the dorsal wall no longer than 20 to 25 cm., *leaving 20 to 30 cm. of the sigmoid free for twisting* and flexing. However, the sigmoid frequently elongates to lengths far greater than average, while the line of attachment remains constant. Fernström[9] reviewed 15 cases in which the sigmoid flexure measured between 195 and 200 cm. In such cases there is as much as 6 feet (180 cm.) of redundant bowel free to twist around the fan-shaped mesosigmoid.

Tumors, cysts, adhesions, fecoliths and foreign bodies are other organic conditions producing a diathesis to volvulus.

Mesenteric tumors, cysts and fixation bands tend to produce anatomic conditions comparable to those predisposing to volvulus that have already been mentioned. They act as a fixed point of attachment around which the loop of bowel may twist. Occasionally adhesive bands form at the base of the mesentery and then, through contraction, shorten the line of attachment and produce a fan-shaped mesocolon. Since these cysts, tumors and adhesions probably occur on both sides of the abdomen with equal frequency, they help but little in explaining the difference in incidence of volvulus of the ascending and of the descending colon.

Intracolic conditions also influence the incidence of volvulus. The contents of the ascending and of the descending colon differ greatly in physical consistency. The stool in the ascending colon is soft or liquid, while that in the descending colon is formed and often hard. This difference in bowel content may be an important cause of the higher incidence of volvulus on the left than on the right side. Bloodgood[10] and Bargen[11] agree that dilatation, thickening and elongation of the descending colon often result from the hard feces, collections of gas and defecation difficulties associated with constipation. Such does not occur in the ascending colon.

Occasionally volvulus of the intestine can be produced by a force acting directly on a loop of bowel. This force may be provided by an organ such as an ovarian tumor with a long pedicle or a hydrosalpinx or pyosalpinx which has become attached to a loop of small bowel. Torsion of these organs is a common occurrence, and when they are adherent to intestine a secondary volvulus of the intestine may be the result. This secondary volvulus of the intestine may be far more serious than the primary volvulus of the organ involved (ovary, tumor or cyst). Such secondary volvulus almost always involves the small rather than the large intestine and often results in gangrene necessitating resection.

The role of purgatives in the pathogenesis of volvulus should not be omitted. Patients who have an anatomic or organic diathesis to volvulus may be thrown into an acute attack of volvulus by the violent peristalsis produced by purgatives.

The following case illustrates how volvulus can occur in the ascending colon which had fully migrated, rotated and descended but which had not become fixed to the dorsal wall. Acting on the abnormal mobility was a tumor, which is generally conceded to be one of the rarest in the abdomen. It was a cyst in the mesentery of the hepatic flexure. Judd and Crisp[12] reported that the Mayo Clinic found only 8 mesenteric cysts in 820,000 admissions; the Massachusetts General Hospital had 6 cases between 1912 and 1929, and Los Angeles General Hospital had 1 between 1912 and 1934. Miller[13] sums up their rarity by stating that less than 400 cases had been reported to 1935.

REPORT OF CASE

History.—Mrs. O. B., a white woman aged 30, a farmer's wife, entered McKennan Hospital Oct. 26, 1945 with a chief complaint of intermittent attacks of abdominal pain. The first attack had occurred approximately six years ago, with a total of ten in the last six years. The patient stated that the pain was always located in the right hypochondrium and started suddenly without warning, lasting from two hours to two days and forcing the patient to double up. The pain tended to radiate across the epigastrium and was portrayed as sharp, cutting and burning. It was constant and not intermittent during the attack and was not associated with nausea, vomiting, anorexia or obstipation. Three months prior to her entrance to the hospital, the patient gave birth to her seventh child, after which she could feel something moving back and forth across the epigastrium. However, there was no history of colic or audible borborygmi. Stools and bowel movements were always normal during the attacks. Each attack became more severe than the preceding one, and they occurred with increasing frequency.

---

[7] Rothman, M.; Bruckner, J. P., and Zetena, D. F.: Volvulus of the Cecum and Ascending Colon, Am. J. Surg. **60:** 292-297, 1943.

[8] Chalfant, S. A.: Torsion of the Cecum with Review of the Literature and Report of a Case, Am. J. Obst. & Gynec. **2:** 597-600, 1921.

[9] Fernström, B.: A Contribution to the Knowledge of Volvulus of the Sigmoid Flexure, Especially Its Chronic Form, and an Account of the Technique Employed in Colonic Resection, Acta chir. Scandinav. **61:** 213-256, 1926.

[10] Bloodgood, J. C.: Intestinal Obstruction Due to Volvulus or Adhesions of the Sigmoid Colon, Ann. Surg. **49:** 161-182, 1909.

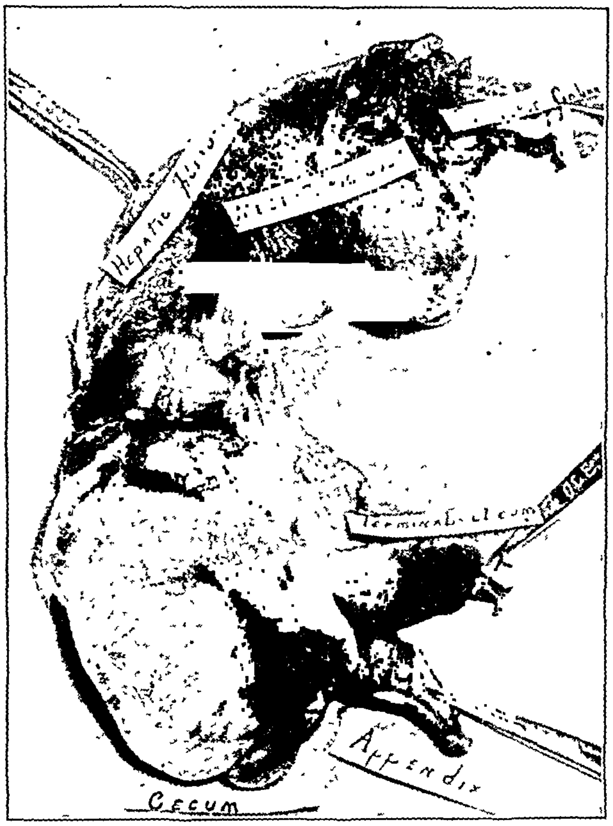
[11] Dixon, C. F., and Bargen, J. A.: Volvulus of the Sigmoid, West. J. Surg. **40:** 470-474, 1932.

[12] Judd, E. S., and Crisp, N. W.: Primary Tumors of the Mesentery, Proc. Staff Meet., Mayo Clin. **7:** 555, 1932.

[13] Miller, L. A.: Rarity of Congenital Mesenteric Cyst, Am. J. Dis. Child. **50:** 1196-1202 (Dec.) 1935.

The past history of the patient revealed only childhood illnesses with no previous surgical operations. The family history was essentially noncontributory. Inventory of the patient's systems revealed nothing in addition to her present illness. The patient was a septipara and septigravida with all normal deliveries and no associated complications. Her menstrual history was normal in all respects except for irregular periods with intervals of five to six weeks.

Immediately prior to her entrance to the hospital, she was suddenly seized with severe pain in the right hypochondrium which was constant, doubled her up and produced extreme tenderness along the right half of the abdomen. She again had no obstipation, no vomiting, no distention and no nausea. She was unable to stand erect and experienced considerable giddiness.



Specimen removed at laparotomy.

Physical Examination.—Physical examination revealed entirely normal conditions except for the abdominal observations. When she was first seen, there was some definite tenderness in the right upper quadrant, but tumor masses could not be made out, the patient being fairly obese. Vaginal examination was entirely noncontributory. Urinalysis and examination of the blood revealed normal conditions. A roentgenogram of the gallbladder, after the gallbladder dye had been ingested, revealed a normally functioning gallbladder. After the patient had been in the hospital for two or three days, it was thought she was recovering spontaneously. However, on the third day, October 29, she experienced another attack which was more severe than any she had had previously. At this time a suggestion of a tumor mass could be felt to the right and below the umbilicus. Although a barium clysma had been planned at this time, it was decided that the patient had an acute condition requiring surgical intervention in the abdomen, and without further delay she was prepared for an abdominal laparotomy.

Surgical Operation.—Under cyclopropane anesthesia a midline suprapubic incision was made, and when the abdomen was opened blood-stained fluid was found. Exploration revealed that the liver was normal on palpation. A mass was found in the right portion of the midabdomen which was approximately the size of a medium grapefruit. In order to get a better examination, the incision was extended 2 inches (5 cm.) above the umbilicus, and the mass was delivered through the incision. The mass was found to consist of a twisted ascending colon, which had been twisted clockwise approximately 240 degrees. When this bowel was untwisted, it was found that a tumor was intimately attached to the hepatic flexure of the colon and to the medial leaf of its mesentery. Careful examination of the tumor revealed that it was a trilocular mesenteric cyst. Two of the loculated parts of the cyst were anterior and one was posterior between the leaves of the mesentery. The latter could not be seen from the front but could be palpated readily. There were several dark, ecchymotic areas on the peritoneal surface of the ascending colon, and the bowel wall was extremely congested and distended. There appeared to be thrombosis of the right colic veins. Numerous swollen glands were present in the right mesocolon. The cecum was found to be hypermobile but situated in the right lower quadrant of the abdomen and not involved in the volvulus.

A right hemicolectomy was performed with ease through the suprapubic incision because of the extreme length of the ascending mesocolon. The terminal 6 inches (15 cm.) of the ileum, the cecum, the appendix, the ascending colon and the right half of the transverse colon were removed. The terminal end of the ileum and the proximal end of the transverse colon were then closed, following which a side to side anastomosis was performed without using clamps. The entire operative procedure required sixty minutes.

The postoperative course was uneventful. The patient had a normal bowel movement on the third day, and during the postoperative course she did not at any time have diarrhea or frequent stools such as commonly occur after resection of the right half of the colon. Since her surgical operation she has enjoyed excellent health and is doing her work without complaints.

Pathologic Data.—The pathologist's report is as follows: The specimen consists of 6 inches (15 cm.) of the terminal portion of the ileum, the appendix, the cecum, the ascending colon and the right half of the transverse colon. The bowel wall of the ascending colon, and especially the hepatic flexure, is edematous, and there are numerous dark, ecchymotic areas underneath the peritoneum. The mesenteric veins are thrombosed, but branches of the right colic artery appear entirely patent. In the hepatic flexure, there is a trilocular mesenteric cyst, two in front and one situated between the leaves of the mesentery. Each of the three is approximately the size of a lemon, and their appearance is that of a simple mesenteric cyst. They contain a clear, slightly stained fluid. Microscopic examination reveals the tumor to be a true cyst, the lining of which is endothelium.

SUMMARY

1. From the data reported in the literature it is apparent that (*a*) volvulus of the sigmoid flexure is relatively common, (*b*) volvulus of the cecum is rare and (*c*) volvulus of the ascending colon is almost unknown.

2. Analysis of the anatomic and physiologic peculiarities of these three parts of the colon reveal that:

A. Various conditions predispose or directly produce volvulus. The majority of these etiologic conditions are familiar to the descending colon and foreign to the ascending colon. Thus is explained the wide difference in incidence of volvulus of these two parts of the large bowel.

B. A combination of two or more etiologic forces may be necessary before volvulus results. Considerable mobility of the ascending colon is common, but it alone does not cause volvulus. The other conditions that can team up with this mobility to produce volvulus of the ascending colon, such as those in the case reported in this paper, are infrequent.

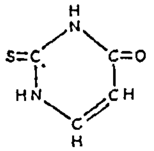
Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

THIOURACIL.—2-Thiouracil.—$C_4H_4N_2OS$.—M. W. 128.15. The structural formula of thiouracil may be represented as follows:



Actions and Uses.—Thiouracil interferes with the formation of thyroxin by the thyroid gland. It is useful in the treatment of hyperthyroidism, thyrotoxicosis and thyroiditis. It is of no value and should not be used in other derangements of thyroid activity or in conditions not associated with hyperthyroidism.

Since thiouracil does not inactivate or interfere with the action of thyroxin already formed and stored in the gland, the effects of thiouracil medication do not appear until this store of thyroxin has been utilized. It may take several days to several weeks for the signs of decreased thyroid activity to become manifest, particularly if the patient has received previous iodine therapy.

Not all patients experience a permanent remission following thiouracil therapy, and the duration of treatment necessary to secure permanent relief from hyperthyroidism has not been determined. On the basis of the available information, it can be recommended only that thiouracil be used for preoperative treatment or for those patients for whom operation is contraindicated. The wisdom of depending on thiouracil as a substitute for operative procedure can be determined only by following the results of investigations carried on for longer periods.

Thiouracil produces adverse reactions in a high percentage of patients. The most frequent and severe complications of thiouracil therapy are granulocytopenia, leukopenia, drug fever and dermatitis. Jaundice, purpura and anemia have been reported following thiouracil therapy. The drug should be discontinued and appropriate therapy commenced immediately on the detection of signs of any of these complications.

Since the mild and the juvenile types of hyperthyroidism can frequently be controlled adequately by iodine therapy alone, thiouracil should not be used for these patients unless the safer form of therapy proves ineffective.

Dosage.—Initially 0.4 Gm. per day in divided doses, and after the symptoms are controlled or the basal metabolic rate is within the normal range the dose should be reduced to 0.1 or 0.2 Gm per day. *Patients should be instructed to cease medication and report to their physician immediately if any adverse symptoms such as sore throat, fever, coryza or malaise are experienced.*

Tests and Standards—

Thiouracil occurs as a crystalline powder having not more than a slight yellow tint or more than a slight odor and possessing a bitter taste. It melts about or somewhat above 300 C. It is slightly soluble in ethanol, very slightly soluble in water and in ether, and practically insoluble in chloroform and in benzene. The *p*H of a saturated aqueous solution of thiouracil is within the range 4.8-5.5.

Add 5 cc. of 50 per cent sulfuric acid to 0.1 Gm. of thiouracil in a test tube. Hold a piece of moistened lead acetate paper over the mouth of the tube and heat the mixture: a black color develops on the paper.

Slowly add bromine water to about 25 mg. of thiouracil in a test tube until a faint yellow color persists. Discharge the color with heat. Cool and add 10 cc. of saturated barium hydroxide solution: an opalescent, lavender colored precipitate develops.

Add a few drops of silver nitrate solution to 2 cc. of a saturated solution of thiouracil in ammonium hydroxide: a precipitate forms which redissolves on shaking. Add 1 cc. of silver nitrate solution: a slightly greenish gelatinous precipitate forms.

Dry 1 Gm. of thiouracil, accurately weighed, to constant weight at 100 C.: the loss in weight does not exceed 0.5 per cent.

Char about 1 Gm. of thiouracil, accurately weighed, cool, add a few drops of sulfuric acid to the cooled mass and ignite: the amount of residue is not more than 0.10 per cent.

Add 4 cc. of water and 1 cc. of silver nitrate solution to 0.5 Gm. of thiouracil in a test tube. Add 5 cc. of nitric acid and allow to stand until the reaction is complete. Expel the oxides of nitrogen by heating, dilute with 10 cc. of water and cool to room temperature: the turbidity does not exceed that of 0.1 cc. of fiftieth normal hydrochloric acid used as a control.

Heat 75 cc. of water containing 1.5 Gm. of thiouracil for ten minutes on a steam bath. Cool, filter and adjust the volume of filtrate to 75 cc. by washing the filter paper. Add 1 cc. of barium chloride test solution and 5 drops of dilute hydrochloric acid to a 50 cc. portion of the filtrate: the turbidity does not exceed that of 0.2 cc. of fiftieth normal sulfuric acid used as a control.

Dissolve 1 Gm. of thiouracil in 8 cc. of sodium hydroxide test solution, and dilute to 20 cc. with water. Add 5 drops of 10 per cent sodium sulfide solution: no more color develops than corresponds to 20 parts per million of lead (U. S. P. XII, p. 586).

Weigh accurately about 50 mg. of thiouracil and transfer to an iodine titration flask. Add .0 cc. of water, 1 cc. of normal sodium hydroxide and 50 cc. of tenth normal bromide bromate solution. Acidify with 10 cc. of hydrochloric acid, stopper, and let stand for ten minutes. Add 10 cc. of 10 per cent potassium iodide solution, stopper and seal with 5 cc. of chloroform. Let stand for five minutes and then allow the chloroform to enter the flask. Titrate with tenth normal sodium thiosulfate to the disappearance of color in the chloroform layer. Each cubic centimeter of tenth normal bromide bromate solution is equivalent to 0.001282 Gm. of thiouracil: the thiouracil content is not less than 98 per cent nor more than 102 per cent.

THIOURACIL TABLETS:

Weigh accurately twenty thiouracil tablets and grind to a fine powder. Transfer about 500 mg., accurately weighed, to a 100 cc. volumetric flask. Add 5 cc. of 10 per cent sodium hydroxide solution and dilute to volume with water. Mix thoroughly, filter and pipette 20 cc. of the filtrate into a 250 cc. iodine flask. Add 50 cc. of tenth normal bromide-bromate solution, 10 cc. of 10 per cent hydrochloric acid, stopper, shake and allow to stand for ten minutes. Add 10 cc. of 10 per cent potassium iodide solution, stopper and seal with 5 cc. of chloroform. Let stand for five minutes and then allow the chloroform to enter the flask. Titrate with tenth normal sodium thiosulfate to the disappearance of color in the chloroform layer. Each cubic centimeter of tenth normal bromide bromate solution is equivalent to 0.001282 Gm. of thiouracil: the thiouracil content is not less than 95 per cent nor more than 105 per cent of the claimed amount.

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Tablets Thiouracil: 0.1 Gm.

PARKE, DAVIS & CO., DETROIT

Tablets Thiouracil: 0.1 Gm.

WILLIAM H. RORER, INC., PHILADELPHIA

Tablets Thiouracil: 0.1 Gm.

E. R. SQUIBB & SONS, NEW YORK

Tablets Thiouracil: 0.1 Gm.

WINTHROP CHEMICAL CO., INC., NEW YORK

Tablets Thiouracil: 0.1 Gm.

VITAMIN B COMPLEX SYRUP (See New and Nonofficial Remedies, 1946, p. 618).

The following dosage form has been accepted:

MARVIN R. THOMPSON, CONNECTICUT

Vitamin B Complex Syrup: Each 5 cc. contains thiamine hydrochloride 1.5 mg., riboflavin 1.0 mg., pyridoxine hydrochloride 0.5 mg., niacin and niacinamide 7.0 mg., with other vitamin B complex factors as extracted from 10 Gm. of dried brewers' yeast.

THIAMINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1946, p. 618).

The following dosage forms have been accepted:

THE HARROWER LABORATORY, INC., GLENDALE, CALIF.

Tablets Thiamine Hydrochloride: 10 mg.

THE VALE CHEMICAL CO., INC., ALLENTOWN, PA.

Tablets Thiamine Hydrochloride: 1 mg., 3 mg., 5 mg. and 10 mg.

DEHYDROCHOLIC ACID (See New and Nonofficial Remedies, 1946, p. 352).

The following dosage forms have been accepted:

E. S. MILLER LABORATORIES, INC., LOS ANGELES

Tablets Dehydrocholic Acid: 0.243 Gm.

THE HARROWER LABORATORY, INC., GLENDALE, CALIF.

Tablets Dehydrocholic Acid: 0.024 Gm.

RIBOFLAVIN (See New and Nonofficial Remedies, 1946, p. 623).

The following dosage form has been accepted:

THE HARROWER LABORATORY, INC., GLENDALE, CALIF.

Tablets Riboflavin: 5 mg.

ASCORBIC ACID (See New and Nonofficial Remedies, 1946, p. 631).

The following dosage form has been accepted:

E. S. MILLER LABORATORIES, INC., LOS ANGELES

Tablets Ascorbic Acid: 25 mg., 50 mg. and 100 mg.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - CHICAGO 10, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Eight dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, MARCH 1, 1947

IODIZED SALT AND GOITER

The Council on Foods and Nutrition of the American Medical Association, some time ago, adopted a general decision on the use of iodized salt in the prevention of goiter. The Council indicated its belief that iodine is an essential chemical element for normal nutrition and that an inadequate supply of iodine in the diet tends to the development of an iodine deficiency disease known as simple goiter. In its decision the Council emphasized its point of view that this is wholly a preventive measure and is not concerned in any way with the cure of goiter. It defined an accepted iodized salt as one containing not more than 1 part of sodium iodide or the iodine equivalent of any other suitable iodine compound to 5,000 parts of salt. Iodized salt containing more than this quantity is considered a medicament, not to be advertised to the public for table or cooking uses.

At a meeting of the Council held in November 1946 the Council was informed that legislation would be introduced into the Congress designed to amend the Food, Drug and Cosmetic Act so that table salt would be required to contain an amount of iodine equivalent to that specified in the general decision. The Council, therefore, recommended to the Board of Trustees of the Association that action be taken toward giving the support of the American Medical Association to such standardization of table salt. The Board of Trustees at its meeting in December 1946 approved this action of the Council.

In an article published in the *Ladies' Home Journal* Senator Desmond of New York urged the Food and Drug Administration to standardize table salt in this manner, and Dr. P. B. Dunbar, Commissioner of Food and Drugs, rightly pointed out that the Food and Drug Administration cannot require that salt be iodized without adequate legislation. In this connection Mr. Alexander Falconer, secretary of the Salt Producers Association, said that the salt companies are willing and glad to aid by standardizing salt in the manner suggested but that it is illegal and impossible for them to agree among themselves to produce only table salt containing the requisite amount of iodide. He believes that the proper procedure would be continuous education by physicians and public health officials leading the public to use such salt.

In the midst of this drive toward aiding the prevention of simple goiter in the manner suggested comes an announcement by Dr. Isidor Greenwald of New York University College of Medicine of his belief that a deficiency of iodine is not related to the causation of simple goiter and asserting also that the giving of iodine to people in so-called goiter belts has not reduced the incidence of new goiter to zero. This extraordinary folly, unsubstantiated by anything resembling scientific evidence, has been circulated by Science Service. Moreover, one of the staff writers at Science Service has supported the statement by wide distribution in a syndicated column.

Physicians who have carefully followed the scientific literature on the subject will naturally deprecate the unfortunate publicity given to the unsubstantiated views of Dr. Greenwald. The Council on Foods and Nutrition made its decision after a careful study of the available evidence. The experiences in such states as Michigan and Ohio are sufficient to establish that the widespread use of additional iodine in the diets of growing children in areas where iodine is deficient in the soil is a most valuable technic for preventing a vast amount of unnecessary simple goiter. The fact that goiter still occurs occasionally in such areas may then be taken as evidence that standardization of table salt to contain the necessary iodine would bring about a still further reduction in the incidence of simple goiter.

PERIARTERITIS NODOSA AND HYPERSENSITIVITY

Periarteritis nodosa has generally been regarded as a rare disease, probably infectious, that almost always ends fatally and has rarely been diagnosed in vivo. Since its original description by Kussmaul and Maier in 1866 and by P. S. Meyer in 1878, who described the syndrome as a triad of chlorotic marasmus, polymyositis and polyneuritis with gastrointestinal symptoms, some 400 cases have been recorded. More recent observations suggest that the disease is not as rare as was formerly believed. With greater familiarity by the clinician its diagnosis in vivo should not present insuperable difficulties; it is not necessarily always fatal, and it probably represents an allergic reaction of the small arteries to a variety of antigens, rather than being a specific infectious disease.

The pathology of periarteritis nodosa was described by Gruber in 1926 and by Arkin[1] in 1930. Whatever the causative factor, its elective affinity for the arteries of the body is its distinguishing pathologic feature. The organs most frequently involved, according to Arkin, are the kidneys, heart, liver, muscles, peripheral nerves and the gastrointestinal tract. The process is usually widespread but may be limited to the arteries of a single system or of a single organ. The chief histologic feature is a necrotizing lesion of the arterial wall with a surrounding inflammatory reaction. The earliest changes are to be found in the media, with later involvement of the subintima or of the whole thickness of the wall. The chief secondary changes in the arteries are aneurysm formation, thrombosis and hemorrhage.

The clinical manifestations are extremely varied. More than half the cases have an acute onset, frequently with high fever, chills, a polymorphonuclear leukocytosis, occasionally eosinophilia, and manifestations of severe infection. The symptoms vary with the location of the process and the nature of the secondary changes in the vessels. Renal, cardiac, peripheral nerve and gastrointestinal symptoms are most common. The usual mode of onset noted by Spiegel[2] included severe abdominal pain associated with articular, cardiac or renal symptoms. There may be icterus, enlarged spleen and enlarged, hard lymph nodes. Hypertension, nephritis, renal insufficiency, cardiac failure, intense abdominal pain, ulceration or gangrene of the bowel, peripheral neuritis and muscular atrophy are the characteristic symptoms in advanced cases. Death is caused by renal insufficiency, cardiac failure or rupture of an aneurysm. The diagnosis is difficult except in the rare cases which exhibit the characteristic subcutaneous nodules with the characteristic histologic changes in the blood vessels.

The etiology of periarteritis nodosa has been attributed to syphilis, to a filtrable virus, to various infections, to toxic injuries and to disease of the central nervous system. Gruber was among the earliest investigators to suggest that the condition might be due to hypersensitivity. The recent observations of Rich[3] and of Rich and Gregory[4] add support to this theory. Rich found vascular lesions characteristic of periarteritis nodosa in the viscera of 5 patients who shortly before death had had hypersensitive reactions following therapeutic injections of foreign serum; in a biopsy of muscle from a patient who had a hypersensitive reaction following foreign serum and sulfonamide therapy, and in the viscera of a patient who had received prophylactic sulfonamide therapy against aspiration pneumonia. None of these patients had had any symptoms suggestive of periarteritis nodosa prior to their terminal, acute illness for which the serum or sulfonamide was administered, and the vascular lesions were fresh. Clark and Kaplan[5] observed arterial lesions of the same character as those of periarteritis nodosa in two necropsies on patients who had serum sickness shortly before death. Rich and Gregory produced typical diffuse periarteritis nodosa by establishing in rabbits a condition analogous to serum sickness in man. These experiments, as well as the clinical observations of Rich, suggest that periarteritis nodosa is one manifestation of the anaphylactic type of hypersensitivity. Acute, diffuse glomerulonephritis occurred in a number of the animals that developed a hypersensitive reaction to the foreign serum. This supports the view, in the opinion of these authors, that some cases of glomerulonephritis in man may be due to hypersensitivity. Further support is given by the observations of Reimann,[6] who found typical lesions of periarteritis nodosa in 2 cases diagnosed as trichinosis. He believes that trichinosis may be a disease with strong allergic manifestations and that it may in certain instances serve as one cause of the syndrome called periarteritis nodosa.

FREE MUSCLE MYOCARDIAL TRANSPLANTS

Experiments by O'Shaughnessy[1] and Beck[2] have shown that pedicle muscle grafts on the heart result in the creation of a significant vascular anastomosis between the two tissues. Such grafts not only bring extra blood to the heart but also serve as anastomotic channels between healthy and diseased coronary beds. Clinical applications of large pedicle muscle grafts, however, are limited because of the extensive surgical manipulation involved.

A simpler technic for the replacement of myocardial infarcts had been previously suggested by Leriche and Fontaine,[3] who recommended the use of nonpedicle or free muscle grafts. The feasibility of free muscle grafts has been recently tested by Weinstein[4] and his associates of the Laboratory of Experimental Surgery, New York University College of Medicine.

Nine dogs were anesthetized by intravenous injection of pentobarbital sodium. Positive pressure was maintained in the lungs when the thorax was opened. Free muscle grafts, rectangular and averaging 7 by 4 cm., were obtained either from the internal oblique muscle of the abdominal wall or from the vastus lateralis of the lower extremity. The graft was placed about the heart and anchored to it by means of three or four fine cotton sutures. The epicardial surface was not scarified. The pericardium was sutured over the graft, the latter being included in the suture line. The Emerson respirator was used in reestablishing voluntary respiration.

---

[1] Arkin, Aaron: A Clinical and Pathological Study of Periarteritis Nodosa, Am. J. Path. **6**:401 (July) 1930.

[2] Spiegel, Rose: Clinical Aspects of Periarteritis Nodosa, Arch. Int. Med. **58**:993 (Dec.) 1936.

[3] Rich, A. R.: The Role of Hypersensitivity in Periarteritis Nodosa, Bull. Johns Hopkins Hosp. **71**:123 (Sept.) 1942.

[4] Rich, A. R., and Gregory, J. E.: The Experimental Demonstration That Periarteritis Nodosa is a Manifestation of Hypersensitivity, Bull. Johns Hopkins Hosp. **72**:65 (Feb.) 1943.

[5] Clark, Eugene, and Kaplan, B. I.: Endocardial, Arterial and Other Mesenchymal Alterations Associated with Serum Disease in Man, Arch. Path. **24**:458 (Oct.) 1937.

[6] Reimann, H. A.; Price, A. H., and Herbut, P. A.: Trichinosis and Periarteritis Nodosa, J. A. M. A. **122**:274 (May 29) 1943.

[1] O'Shaughnessy, L.: Brit. J. Surg. **23**:665, 1936.

[2] Beck, C. S.: Ann. Surg. **118**:788, 1943.

[3] Leriche, R., and Fontaine, R.: Bull. et mém. Soc. nat. de chir. **59**:229, 1933.

[4] Weinstein, M., and Shafiroff, B. G.: Science **104**:410 (Nov. 1) 1946.

Except in cases of infection, the postoperative course was not accompanied with shock or severe disability. After a period of ten to fifteen weeks, 6 animals were killed and the cardiac transplants examined. In 3 dogs there were signs of intrapleural, pulmonary and pericardial infection. In these dogs a total absorption of the muscular elements of the graft had occurred with replacement by connective tissue.

In the 3 noninfected dogs successful takes were found. The grafts were well fixed to the myocardium with little or no mobility. Between the grafts and the myocardium there was a rich vascular network. Sections taken through the grafts showed normal muscular structure. Evidences of deleterious effects on cardiac function, extrapericardial adhesions or increased intrapericardial pressure were absent. The remaining 3 dogs are still alive and have not shown signs of postoperative infection.

Weinstein believes that this is sufficient evidence that free muscle transplants may be successfully grafted on the canine myocardium.

Current Comment

HUMAN GLANDERS

Glanders is primarily a disease of horses. The few human beings who have been victims in the past have usually been infected by contact with these animals. Apparently the only case of glanders in a human being that has occurred in the United States in recent years was reported in 1938.[1] Recently, however, Howe and Miller[2] have recorded 6 cases of human glanders within one year among a group of laboratory research workers. The causative organism, Malleomyces mallei, was not isolated in any of the cases, though all had been involved in laboratory work with this organism. In none of the cases could the incubation period be accurately determined. Incidental evidence suggests that the incubation period ranged from about ten to fourteen days. Pulmonary lesions were present in 5 of the 6 cases, which suggests that the main route of infection was through the respiratory tract. The diagnosis of glanders was based principally on a significant and sustained rise in the serum titer of agglutinins for M. mallei; this occurred in 5 of the 6 cases, and the sixth case showed a rise in titer of lesser degree. Persistent leukopenia and relative lymphocytosis were the only other striking laboratory observations. A positive reaction to the intracutaneous injection of 0.1 cc. of commercial mallein in a dilution of 1:10,000 accompanied the significant serologic response in 5 cases. In 4 of the cases the lesions observed by x-ray suggested an early stage of lung abscess, though in 1 case the x-ray film showed a diffuse lesion more similar to pneumonitis in character. The patients were treated with sulfadiazine because of the apparent efficacy of this drug when given to animals injected experimentally with M. mallei. The clinical response was not entirely clearcut in all cases, but the indications are that infection with M. mallei is amenable to treatment with sulfadiazine and that the use of this drug warrants further trial in cases of human glanders. Although this report of 6 cases deals only with laboratory infections, the evident ability of M. mallei to invade the human body suggests caution in dealing with this equine disease.

THE MEDICAL RECORD LIBRARIAN

The classification and care of medical records in hospitals and similar institutions have become increasingly important. The wide use of the Standard Nomenclature of Disease and Operations sponsored by the American Medical Association since 1937 has been a significant factor in this development. Coincidentally the functions of medical record librarians have increased in significance for hospital science. An adequate supply of trained professional medical record librarians, however, has not kept pace with the greater need for such services. As a temporary expedient a short in-service training program, financed by the National Foundation for Infantile Paralysis, has been established by the American Association of Medical Record Librarians. This program is designed to assist those who are now working in medical record libraries but who are unable to attend an approved school. This program is only a week long and cannot be compared with the training which is obtained in the regular courses, which include at least 208 hours on medical fundamentals and terminology. Physicians should appreciate the difference in training between a regular course in medical record work and the abbreviated in-service training. Record library personnel who have had only the latter lack the background of medical terminology and medical fundamentals desirable if they are to be of greatest possible assistance to the professional staff. The medical staffs, therefore, will need to spend more time in explanation of diagnostic terms and medical fundamentals with members of this group than they will with those who have had the thorough grounding furnished by approved regular schools in medical record library work.

---

[1] Herold, A. A., and Erikson, C. G.: Human Glanders—Case Report, South M. J. 31: 1022 (Sept.) 1938.

[2] Howe, Calderon, and Miller, Winston R.: Human Glanders: Report of 6 Cases, Ann. Int. Med. 26: 93 (Jan.) 1947.

ORGANIZATION SECTION

ANNUAL CONFERENCE OF SECRETARIES AND EDITORS OF CONSTITUENT STATE MEDICAL ASSOCIATIONS

(Concluded from page 555)

Saturday, December 7, Evening

SESSION FOR SECRETARIES

Dr. Douglas L. Cannon, Montgomery, Ala., *Presiding*

Dr. L. Fernald Foster, Secretary, Michigan State Medical Society, read a paper on Commercial Exhibits.

The Home Office of a State Medical Association

Mr. R. H. Graham, Executive Secretary, Oklahoma State Medical Association: I am going to take the opportunity of doing what others have done today, and that is to digress from my assigned subject. In Oklahoma we have tried to conduct the home office in the manner in which the Council has designated. I cannot comprehend how a home office can function properly outside the capital city. Fifty per cent of my time outside of the administrative duties are with some governmental agency, and I believe that a state medical association should take that into consideration. Many members do not know what exists in a home office, for they have never been there. In many instances the reason is that it has been difficult to get to that particular office. If an office can be located where it is easy to stop in, I think you will be surprised at the number of doctors that will do so.

This state association has for ten years conducted a postgraduate course in medical education which was copied somewhat after that of the state of Tennessee. We bring in an outside speaker and pay him a liberal salary. The course takes two years to conduct in forty teaching centers. It started with obstetrics, then went to pediatrics, internal medicine, general surgery and diagnosis, and it will soon start gynecology. This state medical association has about 1,500 members, and since the inception of that course there have been over 1,000 members who have enrolled and attended seven of the ten lectures. That is a home office in action.

By the same token, a county medical society decided that there might be something wrong with the malpractice insurance policies and the rates. And through their initial effort and subsequently through that of the state medical association there was employed a firm of insurance attorneys who wrote a policy. It was taken to one of the largest insurance companies who underwrote it. The rate was reduced from approximately $70 a year to $26 a year. It is easy to collect dues when a home office can say to a doctor "You have saved three times this year on your malpractice insurance what your annual dues cost you."

There has come the time when home offices have to think. I can remember when about the only activities were the annual meeting and the exhibitors to be worried about, but today that has passed. All of us are worrying about the Veterans' Administration medical care program, about rural health. A leading newspaper in a state exposed the conditions in eleemosynary hospitals and overnight there sprang up from well meaning persons a statewide organization to cure all the mental health ills in this state without its ever having given any consideration to the medical problems involved. It went so far and so rapidly that a statewide mass meeting was held in the largest auditorium in the state. They suddenly discovered that they had no money, no office and no secretary, and yet there had been several thousand dollars sent in. This particular state association at a mass meeting offered the entire facilities of that office to this mental hygiene association. Who do you think is going to run that program? That was a home office assuming mature responsibilities.

The home office in Oklahoma has tried something new. We have gone into a newspaper advertising campaign. There has been placed a special assessment of $25 on every member of the state medical association. There will run in the forty-five daily papers of Oklahoma and in thirty-seven weekly papers monthly ads for one year. They are noncontroversial. In each ad there is one repeating statement, "How well do you know your doctor of medicine?" And then there is a short paragraph of explanation under it. We have not yet asked for any editorial comment, but an editorial entitled "Progress in Medicine" was written in the Medill, Okla., *Record,* a county newspaper. That, I think, is a home office in operation.

The question has been asked whether or not we have had any trouble collecting the $25 special assessment. Sixty per cent of the payment of that assessment was easy. The other 40 per cent has not been so easy. The time comes when you go to the county medical society and explain it. On the basis of our experience the voluntary and the personal appearances, I believe we shall collect almost 100 per cent.

A home office of the state medical association is going to have to become a place known and recognized for its honesty, integrity, and ability to answer whatever problem of medicine is reasonable, to any lay or professional or political subdivision. Until the home offices of state medical associations can do that they are not properly discharging their duties to medicine.

DISCUSSION

Mr. Charles S. Nelson, Executive Secretary, Ohio: Do you feel that there might be some possibility of standardization of the prices for booths charged by the state societies? Would there be some possibility of a standardization of the rules and regulations governing who may exhibit? Do you feel there is any advantage to the practice in some states of giving old exhibitors preference in assigning space?

Dr. L. Fernald Foster, Secretary, Michigan State Medical Society: Different conditions obtain in the several states. I can scarcely see how a standardization could be had in a small meeting. The standard relative to who is admitted to an exhibit I think could readily be done, possibly should be done.

Mr. Nelson: I understand that there are some societies that take the list of exhibitors for the last year or the last three or four years. They get the exhibitor folder first. Then at another interval, others get it. What do you think of that?

Dr. Foster: I think we base it on a sense of appreciation to our friends. In other words, there are those who support your state meetings consistently and there are those who support you sporadically and there are those who support you occasionally. We feel that those people who are with us constantly and those people who are interested in our presentations and are there year after year regardless of where we may go should be given preference. We have given up the idea of travel all over the state scattering things over a moderately sized city. We have two places, Detroit and Grand Rapids, where exhibit facilities are ideal. There is a variation in allocation of space in our two cities—one place we have space for 85 exhibitors, the other place we have an opportunity to accommodate 110. We seem to feel it is only fair to support those who are consistently supporting our show. That is probably the fair thing to do.

Dr. Thompson: We had a committee that was to look after the interest of the exhibitors and to bring all of the complaints of any exhibitors. The exhibitors knew that this small committee was representing them—not representing the medical association. They brought all the complaints in, and they were carefully studied and rectified where it was necessary. Then we just went a step further. We raised our prices. We have the full authority and the cooperation of every exhibitor that that price raise is legitimate and in order.

SESSION FOR EDITORS

DR. ROBERT N. NYE, Boston, Presiding

SATURDAY, DECEMBER 7, Evening

CHAIRMAN NYE: Having separate meetings for the editors and the secretaries is an innovation and I think it is a good idea. The editors should take great interest in what the secretaries have to say. That is part of our business. On the other hand, a lot of things that trouble us are not of particular interest to the secretaries.

The Medical Editor Consults His Readers

MR. THEODORE WIPRUD, Washington, D. C.: We made a survey of physician readers of the *Medical Annals of the District of Columbia* in 1939 and made a similar survey seven years later, less than one month ago. I also wrote a letter to editors of all state medical journals, inquiring if they had made a similar investigation. I was gratified with the response to the inquiry. I am not qualified to discuss the scientific aspects of a state medical journal. Dr. Wallace M. Yater, with the assistance of our editorial board, consisting of eight physicians in various specialties, passes on all scientific material. The editor also reviews all material of a general nature published in the Annals. Most of this is prepared by me or under my supervision.

In seventeen years' association with medical journals, I have observed that most editors are at times disturbed by the feeling that their circle of readers is small. The experienced editor endeavors to determine reader interest in the various departments of his medical journal. Most state journals are prepared for publication by a very small staff. Those responsible for the selection and editing of material have many other duties. Scientific editors are usually practicing physicians. Full time secretaries are so immersed in manifold activities they find it difficult to do justice to their journalistic assignments. It seems to me that, despite their handicaps, medical editors have discharged their editorial duties most creditably. I examine all state medical journals in search of new and distinctive material of a nonscientific nature and I have become acquainted with editors who do little work on their journals, and those who take their task seriously. Material published in a few journals is largely limited to papers presented before county medical societies and reprints from other journals. A majority of state medical journals are excellently edited. It is obvious that their editors are putting in an immense amount of time. The appearance of medical journals is uniformly good but appearances do not make up for lack of content. Our journals are not primarily advertising mediums, although some of them give that impression. Thousands of publications clamor for public attention. A few weeks ago I visited the Library of Congress, where I learned that there were 12,804 newspapers published in the United States today, and 6,693 periodicals. In the District of Columbia alone there are 14 newspapers and 202 periodicals. Not all these publications are of interest to doctors. However, there is a large enough percentage to furnish real competition for some 95 national medical journals in this country and Canada, and the state medical journals. No physician will read a state medical journal which does not present scientific material of genuine merit, editorial comments, articles of a general nature and news items interestingly written.

What efforts have editors of state medical journals made to determine reader interest? Of the 35 editors with whom I communicated, 30 replied. Of these, 28 had not conducted a survey or made any formal attempt to ascertain the views of readers. I quote from the reply to my letter from Dr. Robert M. Nye, managing editor of the *New England Journal of Medicine*: "About two years ago we sent a letter to 1,000 readers of the *Journal* requesting information regarding why they subscribed. The list was about equally divided among the geographic areas Connecticut, Ohio, Texas, Washington and Oregon. The report based on the returned questionnaire is as follows: Of the 551 replies received, 282 subscribers, or 51 per cent, stated that they subscribed to the *Journal* because of its total content. Six indicated that the original papers were their chief interest, 6 the progress reports, and 21 the case records. The remainder gave more than one choice. By assigning fractions to these three departments, the totals were as follows: original articles 160, progress reports 170 and case records 221. Thus, although the case records are the most popular, there seems to be no reason for making any radical change in the content of the *Journal*." Other comments might have been quoted. Some editors rated editorial material very highly where reader interest is concerned. Not so surprising was the popularity of personal items. Somewhat lower on the list in some parts of the country was scientific material.

The first survey of readers to determine reader interest in the *Medical Annals* was made in 1939. About 15 per cent of our membership at that time responded. Another attempt was made. Only about two weeks was allowed for the return of the questionnaire, which was hardly ample. The circulation of the *Medical Annals* at present is 1,900. However, the questionnaire was sent only to our 1,350 members. On Nov. 15, 1946, the date on which the returns were tabulated, 179 had replied. I am of the opinion that, in view of the type of questionnaire and the fact that many physicians who replied are prominent members of the profession, the response was satisfactory.

In response to the question "What material not now published would you like to see included?" 83 replied, 14 expressing themselves in complete satisfaction with the material presented, but 69 offering one or more suggestions. Nearly all wished more and better scientific material. Among their suggestions were the inclusion of abstracts of scientific papers presented before District medical societies, a list of recommended scientific reading, reviews of recent scientific literature, more case reports; reports on clinicopathologic conferences and articles on recent advances in medicine. A few urged that both sides of controversial subjects be presented.

The question "What material would you omit?" drew only 67 replies; 36 had no suggestions or felt that the journal should remain as it is. However, there was at least one vote against nearly every feature in our journal.

In answer to the question "Do you like the appearance of the *Annals*?" there were 169 replies, 155 replying in the affirmative, 3 answering no and 11 making criticisms. Nearly all the latter objected to the illustration on the front cover, some being vehement on the subject.

There were 127 who answered the questions "Do you think the layout of the text matter is attractive? How can it be improved?" Although 94 were thoroughly satisfied, 33 were critical or had suggestions to make. Again there was criticism of the cover. Also suggestions were made that the format be changed, the practice of continuing articles in the back of the journal be abandoned, that waste space be used, and that color be introduced in the text matter.

To the question "Do you patronize advertisers in the *Annals*?" 141 replied. There were 124 who said they patronized advertisers; a number gave complete lists of the names of those with whom they did business. Nine were not in practice. Eight said they did not patronize advertisers in the *Annals* as such. One physician said with regard to the advertisements "Never look at them."

The value of such a survey is that it gives the editor a better perspective. Defects in his publication which might go unrecognized are brought to light. Each questionnaire was signed by the returnee, otherwise it was disregarded.

Our method of surveying readers can be improved. I liked Dr. Nye's idea of writing a personal letter to his readers.

As far as the *Medical Annals of the District of Columbia* is concerned, I hope we can improve its contents from the standpoint of quality and that we can give it individuality which will make it be looked on by all our physicians as profitable and pleasurable reading.

It has occurred to me that so-called regional or national medical journal clinics for editors of state medical journals would prove profitable. At these clinics each department of these journals would be subjected to honest, objective scrutiny, discussion being led by topflight authorities in medical journalism. If editors can take the criticism which would undoubtedly be meted out, these clinics would contribute much to the improvement of state medical journals.

Chairman Nye: Mr. Wiprud brought in the *New England Journal of Medicine*. It is a little different, because it has a reasonably large outside circulation. Almost all the editors that Mr. Wiprud wrote to had not made a survey because they apparently thought that they knew more or less how the readers in the state felt about the journal. That is more or less the way we feel about members of the Massachusetts Medical Society. But with a fairly large number of journals going outside the state, we believed that it was only fair to try to find out why they subscribed. We sent out about 1,000 questionnaires and we got over 500 replies. The response showed that the subscribers were essentially satisfied with what they were receiving. One point Mr. Wiprud brought up was that he found that the majority wanted more scientific articles. When I took over the *New England Journal of Medicine* I decided that the chief function of a medical journal was educational, and that is the end toward which I worked. Our circulation has gone up. Possibly we don't pay enough attention to national and state medical affairs. It is very difficult for a state medical journal to handle the things we have had to handle in the last three or four years that have been on a national level. We have always kept our columns open to any of the various committees of the state society that wished to contribute.

Dr. Jonathan Forman, Columbus, Ohio: I assumed the editorship of the *Ohio State Journal of Medicine* in December 1935, when there was complete reorganization of the Journal and a revaluation of the whole program. The purpose of the Journal, however, has not changed since it was inaugurated in 1907. Prior to that, since 1847, the Ohio State Medical Society had published an annual volume of proceedings. If you go through the last two or three volumes you find a continuous discussion of the fact that there ought to be more frequent communications and that there ought to be a house organ connecting the component county societies with the work at the state level. It was as a result of that that the *Ohio State Medical Journal* was founded. When the society changed its name to an association in 1907, Dr. J. H. J. Upham, whom you all remember, assumed the editorship of that journal. It was done in his office for a long time. He had the generous help of a young woman who was hired as his stenographer, and she worked with the *Ohio State Medical Journal* up until a year ago. I am solely responsible for the *Ohio State Medical Journal* as far as its clinical work goes.

I want to emphasize what the preceding speaker mentioned, that we should have some topflight person, possibly not connected with one of our journals, dissect one of us. I would be glad to have him dissect the *Ohio State Medical Journal*. I also want to second what was said about having some clinics for the state medical journal. The *Ohio State Medical Journal* is fundamentally a house organ, 75 per cent of its space being devoted to reports of what local societies are doing, what the state society is doing, what its various committees are doing, what its council is doing, what its house of delegates does and to a report of the administrative offices of the various welfare agencies under the state government and those of the federal agencies located in the state capital. We have the usual number of obituaries and personals, and we try to emphasize, from time to time, things that are in The Journal of the American Medical Association. The *Ohio State Medical Journal* is a result of the cooperation of four men. We are about to take on another helper. My responsibility primarily is for the clinical side and for trying to make the clinical articles as educational as possible. I agree entirely that our function is not the reporting of original work and original ideas; it is bringing our readers up to date. We try to do that in the simplest and clearest possible style of writing. We believe, however, that each paper should reflect entirely the personality of the author. We are helped and we are handicapped by the fact that we are the repositories of papers read at the annual meeting. To make that worth while the committee on scientific work allows us to work with it closely, and the programs are planned not only with the meeting in mind but with regard to the appearance of the journal later. That presents problems which we have to work out and at which we have often failed.

I want to mention our Book Shelf. We do not attempt book reviewing. We make a very earnest attempt to cover all publications that have anything to do with interests of any physician: sex, economics, sociology, fiction in which there is a physician or dentist or a nurse as a character, or where the hospital or the medical school are the locale; textbooks and monographs that are of clinical interest. We try to cover the entire field with brief notices which follow a monotonous formula, in which we repeat what the author said was the purpose of producing the book. We comment on how we think he has succeeded in doing what he set out to do. Then we try to point out to whom among our readers this particular book would be of interest.

We have not been guilty of having white space. We have used the white space left over to fill in with quotations from your journals of the month before. We don't go back of the last month. When some paper breaks a half column, we amuse ourselves by a little column called "Keeping Up with Medicine," in which we comment on things we read and see. That makes up our journal which fundamentally is to interest the doctors of Ohio in their county and state societies. Then we try more or less on the side to do a job of education in the postgraduate or refresher sense. We produce in no sense a scientific journal.

We are circulating thousands of this little book in Ohio called "The Twenty-Five Points," in which we emphasize that there are twenty-four other things, including housing and welfare and nutrition and control of communicable diseases, that the public should attend to before they even consider the possibility of nationalization of the medical profession. It is turning out to be, as near as we can judge, an effective piece of educational material.

Chairman Nye: In the *New England Journal of Medicine* we aim to benefit the members of the state and district societies, but we try to do it on the basis of education, that is original scientific articles, medical progress, and the case records of the Massachusetts General Hospital.

DISCUSSION

Mr. Wiprud: Mr. Chairman, you stated that the primary function of your journal is education. I think a state journal has the obligation too to express opinions and try to create opinions and comment on them. One thing has not been emphasized in the analysis of our study which you have in your hand. A good many readers are not interested in medical history. Personally I find it most interesting.

Chairman Nye: I may have given the wrong impression. I do not believe that the entire function of the *New England Journal of Medicine* is education, but that is the primary function. On policies that face the medical profession in Massachusetts we cannot be accused of failing to carry articles that have to do with that sort of thing. We have been rather free in carrying articles on medical economics that are in favor of the attitude taken by organized medicine as well as by groups that oppose organized medicine. I think it is a good thing to have both points of view brought forward. Dr. Forman said they were embarrassed by the number of papers presented at the annual meeting. Do you publish all those papers?

Dr. Forman: No, but they are there for consideration.

Chairman Nye: We have the same problem. All those papers are submitted to the editorial board in the same way as any other paper that is sent in for publication.

Dr. Forman: I want to speak a moment on the historical side. One of our jobs is to be responsible for one issue of the *Ohio Historical Quarterly*. We have published in our journal what is called a Historian's Notebook, which I am quite sure is not very well read, but it makes a repository for historical material. With great effort we have been able to arouse interest in about ten physicians, two dentists and one public health worker over the ten year period. We publish one issue of the quarterly of the historical society each year. This small group has produced 228 papers, books and articles on Ohio medical history from the period 1787 to 1856. There have been five official histories of the commonwealth of Ohio published. Outside of a short essay by the late David Todd Killiam there has never been mention of medicine as having anything to do with the history of Ohio until this issue. We just recently published a six volume history, but every bit of it has been taken from these 220 articles which our little group has published. As the thing stops in 1856, there is nothing mentioned about medicine since. So we are going to correct that. We are telling the professional historian "It is obvious you don't have time. You have to have amateurs bring it to you, as far as medicine is concerned." I think there is a legitimate place in the medical journal for local history, even though no one reads it.

Dr. Walter E. Vest, West Virginia: As a matter of fact, don't a pretty good percentage read your historical article?

Dr. Forman: I never made a survey. I doubt it.

Chairman Nye: We carry historical articles every once in a while. Invariably five or six people tell me how much they enjoyed them. We have just asked Dr. Fitz to take the journal of a hundred years ago, go over the issues for the month and abstract interesting items. That means about a page or a page and a half. We have run it for three months and have had many favorable comments.

Dr. Everett M. George, Iowa: I should like to pay tribute to Dr. Bierring, who for twenty-five years has had charge of the history of medicine in Iowa in the section of the *Iowa State Journal.*

Dr. Morris Fishbein: One of the greatest difficulties that I see, with the advancement of some of the state medical journals, is that their editors have stopped studying. They have not advanced their journals; they have not, in general, at any time made anything resembling a major change. They haven't developed reader interest as they have seen it grow, in any one feature. They haven't made a real analysis of their problem as editors. Journalism today is not what it was when some of us began.

I have watched changes in the state medical journals over a period of thirty years. They are in a constant state of flux. Doctors like orderly material; doctors like to see material fairly well departmentalized, so they don't have to look too far for what they want to find. The idea that you are going to create reader interest by suddenly surprising the doctor with a poem at the end of an article is not helpful. He doesn't want a poem at the end of an article on cirrhosis. He may like a little historical reference to cirrhosis of the liver at that point, to somebody's first communication on that subject. If you are looking for a filler to put in at that point, there is a journalistic technic that involves finding a filler that is somewhat apropos to the subject that has just been discussed. The chief interest in journalism is to make it live, and a journal will reflect in every instance the character of its editor. Some of them are dynamic; some of them are lethargic; some of them are very staid, and some of them are disorderly. That is reflected in the publication.

I am impressed with the proposal to hold a clinic on journals. That is the ideal method of instruction. I am impressed with the idea that we should not have sameness in the state medical journals. They ought to differ. There need not be a pattern for a state medical journal. Success would seem to me to lie in departing a little, at least, from other patterns. It is a feature of the *New England Journal of Medicine* that it publish the clinics which it does. It is a feature of the *New York State Journal of Medicine* that it has taken over the symposiums that are developed at Cornell University dealing with the field of therapeutics. There are other features in other publications which are characteristic of those publications, and that is what gives them individuality and makes them worth while.

A journal will reflect, in every instance, the amount of attention and care given to it. It is easy, having received a communication from a doctor, to write at the top "To the Editor," at the bottom, his name and send it to the printer. It is another thing to study a letter, to determine how much of it is useless, to send it back to the doctor to get his approval of it, to edit the communication and to make sure you have concentrated reading matter instead of a lot of continuous discussion that isn't very relevant. The same thing applies to editorial material. There are fundamental rules of journalism that have to do with the creation of a lead in order to catch reader interest at the first sentence.

Many of the scientific contributions take far too long to get into the subject and would be greatly improved if, when the manuscript is received, the first page is eliminated entirely in many instances, at least the first two paragraphs. That means attention, and many editors do not give that attention to their contributions.

Journalism is something to which a man may be partially born but which is made by study and education in the field of journalism. We have a rule each day to go through the exchanges, and the moment a subject is found which seems to be developing interest in the medical profession, because either of its newness or of its controversial character or of some special quality, that is selected at once for comment. The most successful magazines in the United States, in either professional circles or the circles of general magazines, make up a large portion of their content from material that the editor develops rather than from material that comes into the office in routine.

Dr. George W. Kosmak, New York: These two papers as well as the remarks of Dr. Fishbein give much food for thought. Most of us coming here as editors want some help in our problems. One of my friends complained that there was too much advertising material in our state journal. I had the business manager go over the advertisements carried during the last year. We found that in only one issue did the advertising pages exceed the text pages, that our average advertising content amounted to about 40 or 42 per cent, and the rest was text material. How can you get members of the state society to whom their state journal is sent as the official organ to go through it? That is difficult in our case. A questionnaire such as you propose would be a costly procedure. We have a circulation of about 23,000 copies. We have over 20,000 members of the state society enrolled, each of whom gets the journal. Even to reach the members would be a costly proposition. We thought over all sorts of schemes to get people to open the journal when it comes to them. I should like to find the solution to those problems. The state journal, in our opinion should fulfil three purposes: It should primarily be an organ of expression for the policies of the state society. Secondly, it should have a satisfactory scientific content. Thirdly it should be a medium for the dissemination of news in the state. We have had difficulty in New York State in getting local news. No matter whether you delegate the secretary, even agree to pay him, you simply cannot get it. The only way we can get county news, outside of the few bulletins issued by county societies, is to have a clipping bureau supply us. That is what we do. There is a competitive element that the state journals have to meet in New York, and that is the local county bulletins. The Medical Society of the County of New York not merely publishes a news bulletin but includes scientific papers that are read at the meeting. We decline at least 20 per cent, sometimes 25 per cent of all the contributions sent in, and yet we haven't room enough to publish the good ones. I should like to get an opinion or advice on how the paper situation can be remedied. With our circulation of 23,000 copies we have more difficulty in getting paper than the journals with a circulation of a few thousand. As a result, the journal is not able to improve its appearance or to extend its text pages. I should very much like to publish a page or two headed "You may not have seen this," in which I could put extracts from your journal or from Washington *Annals* or from the *Ohio State Medical Journal.* We simply cannot publish abstracts. We haven't the space.

Chairman Nye: I am sure that all of us have run into this paper shortage. We manage to get our paper by paying twice as much, and the paper we get isn't much better than newsprint.

Dr. Blackerby: I should like to ask Mr. Wiprud to comment on the value of one issue of a journal being devoted to a particular field of medicine, when there are so many fields.

Mr. Wiprud: You will note that some of our readers suggested we devote one month's issue of our journal to a field. I thought it a good suggestion. I realize that our survey was fragmentary, but I think it has possibilities. I think, too, that large circulation journals will have to find a way of sampling their readers rather than trying to canvass all of them.

Dr. Vest: We have tried that. Our January issue will be devoted to tuberculosis. We have tried it two or three times and have always got comments.

Dr. Wingate M. Johnson, North Carolina: We had one issue on geriatrics.

Chairman Nye: It seems to me that you would lose a lot of interest; it would be interesting to only one group.

Mr. Wiprud: You couldn't do it continuously.

Sunday, December 8, Morning

Dr. Julian P. Price, Florence, S. C., Presiding

Chairman Price: At this time I present Dr. Robert S. Berghoff, president of the Illinois State Medical Society.

Dr. Robert S. Berghoff introduced the next speaker: Governor Green.

The Field of Public Health

Hon. Dwight H. Green, Governor of the State of Illinois: Officers of the American Medical Association, Editors and Secretaries from all over the United States: There is a field in which you as the spokesmen and leaders of the medical profession and we in government have a common concern—a common responsibility to the people of our communities, our state and our nation. That is the field of public health.

The complexities of modern life have forced a tremendous expansion of governmental services to the people, and nowhere has this expansion been greater than in the field of public health services. It is significant that this expansion has almost invariably followed the recommendations of the leaders in the medical profession. I am impressed by the fact that the biggest and busiest men in your profession—in sharp contrast to the leaders in many other professions and businesses—are most willing to give their time and energy to public problems connected with their work.

America is deeply indebted to individual physicians and medical organizations who have taught us the importance of health conservation. And it is not surprising that while the best of that thinking has produced such a sound national health program as the ten point plan of the American Medical Association, some loose thinking has produced other proposals which you and I both view with alarm.

It is natural that, when various collectivist philosophies were sweeping the world, proposals for some form of state medicine or socialized medicine should take hold with many people. Those proposals have been alluring to many laymen because they have been offered in connection with sound health measures which have your support. It has been difficult for you to oppose a program which threatened to stifle the free enterprise of the American medical profession under a federal bureaucracy far beyond anything America has seen even in the war and postwar years, because that program was offered under the attractive name of "sickness insurance." I believe that fortunately your profession and the people have been saved from any immediate danger of a medical bureaucracy. The national election last month was essentially a referendum on the issue of federal bureaucratic controls versus private enterprise. The verdict was so strongly for private enterprise that I am sure you will find little disposition in the next Congress to proceed further with socialistic experiments.

The medical profession was lucky that the theorists and the bureaucrats, before they got around to experimenting on you, engaged in some vivisection on American industry and agriculture. It was an elaborate series of operations, with many complicated names.

The renewed confidence which America has expressed in private enterprise will not be sustained if we revert to the mistakes and the indifference of the past. The medical profession, if I am correct that it no longer need be on the defensive, has a golden opportunity for greater public service. It should push with all vigor its ten point national health program. In addition it should foster a healthy competition in which its members would seek not only to provide for their patients the finest possible scientific service but to provide it with all the efficiency and economy of the most modern business methods. The medical profession has always been relatively free from governmental interference. The regulations imposed on it have been mainly those proposed in the public interest by the profession itself. That is as it should be.

Yet the realization that health is the first blessing of life, without which all others are meaningless, and that disease is an ever present peril, should move all men of good will, in science and in government, to the fullest cooperation for greater service to mankind. We should welcome to that partnership the splendid men and women of religious and philanthropic organizations dedicated to the aid of the sick and the handicapped. In short, we should preserve the American way of life even in the endless struggle with death.

Chairman Price: If any of you have questions you would like brought up for discussion or that you yourself would like to discuss, please write them out. We will have an hour and a half of open discussion, free for all. First I should like to ask Dr. Douglas Cannon to give the report of his section.

Reports from Sessions for Secretaries and Editors

Dr. Douglas L. Cannon, Montgomery, Ala., presented a summary of the papers read before the meeting of the State Secretaries.

Dr. Robert N. Nye, Boston, Mass., presented a summary of the papers read before the previous evening session of the Editors.

Open Forum

Chairman Price: I will ask Dr. Shanks and Mr. Sethman to bring forward any questions. Has anybody any problem he wants to ask Mr. McDavitt?

Question: "In view of your remarks, do you think it safer for a state association to seek exemption under 101 (7) instead of 101 (6), if the association plans a good deal of aggressive legislative activity?"

Mr. McDavitt: I think that is the only solution. There is no possible disadvantage, as I see it, to being classified under 101 (7) as a business league if we discard any false sense of pride that we have in being called a scientific or educational association. The fact that a medical society is not given exemption under 101 (6) doesn't necessarily mean that the government does not regard it as a scientific or educational organization. It simply means that it doesn't conform to all three of the tests that I spoke of yesterday, namely, while it is scientific and educational, possibly a substantial portion of its activity does consist in carrying on legislative activity. If so, it is not entitled to exemption. The only disadvantage I see, and I don't actually believe myself that it is a disadvantage, is the liability for social security taxes. That should not be much of a financial burden to the average medical society, and it does give a certain advantage to the employees of the association. It gives them the benefit of old age benefits. It does afford them the security that may be had from unemployment compensation, that is, in the event they are thrown out of employment or not employed they are entitled to about $20 a week for twenty weeks.

Question: "If a state society in filing its income report simply classifies itself as a business league, and that has been accepted by the Revenue Department, should the effort be made to obtain any ruling on it, or would that quiet acquiescence be sufficient?"

Mr. McDavitt: I don't think it is safe for a state society to classify itself. I think, particularly with respect to the income tax, it would ask for a ruling from the Commissioner. I don't know of any state society that has been required to pay income taxes. The chances are you will be exempt from income tax. What the government is primarily concerned with is the question of social security taxes. I think, to be on the safe side, I would ask for a ruling as to your status under the income tax act. Seven states, to my knowledge, are not paying income taxes and never asked for a ruling as to their status. I don't have any fears that the government is going to come back and hold them liable for income tax, but the government, when it does catch up with the situation, is going to assess them the proper social security taxes, and they are going to be liable not only for the taxes for the back years but for interest and penalties.

Question: "How can state and county societies better promote good public relations? What type of public relations should be attempted first?"

Mr. Swart: There is no simple answer to that question. The first thing to do is to have made a very comprehensive study of where you are at the present time, what people think of your organization, what the membership thinks of it, what the community in which it operates and exists thinks of it. When you have found that out, you can consult among the medical profession and with people who are acquainted with public relations and with public relations elements in the national office to determine what course of action to take on the basis of the facts known. There have been cases in which organizations, assuming that people did not approve of certain aspects of their program, have talked themselves blue in the face trying to sell the community on things on which the community was already sold and, at the same time, assuming that the community gave complete endorsement to some other policy or activity, missed an opportunity to tell the people about that and to create favorable public opinion, and all the while unfavorable public opinion was quietly gnawing away at the foundation of their status in the community. The simple answer to the second half of that question is that the place to begin is to find out where you are now and operate from there with the best thought and the best advisers that you can get in touch with.

Dr. Alfred Stahl, Newark, N. J.: I should like to have the last speaker discuss something mentioned by the gentleman from Oklahoma in regard to advertising in the daily press. I think that is a pertinent question.

Mr. Swart: I don't know the issue. Are you referring to some particular issue or some particular advertising?

Dr. Stahl: It was brought out in Mr. Graham's paper.

Mr. John Hunton, California: The question of newspaper advertising has been met in California. At present the California Medical Association is expending about $100,000 a year in newspaper advertising. It is being done on an organization basis, and it is being done in a series of community campaigns to enroll as many people as possible in all the voluntary prepayment plans in the state. I say "all the voluntary prepayment plans" because our method has been this: We have set up what we call a coordinating committee for voluntary health insurance. We have included in the membership of that committee not only California Physicians' Service but the three Blue Cross plans operating in the state, and 110 commercial insurance companies which are writing some form of indemnification insurance for health and accident. That committee is staging, county by county, a statewide drive to enroll as many people as possible in the voluntary prepayment plans and in the county campaigns. An important part of the publicity has been newspaper advertising. We have found that when we run a piece of copy 20 inches by 4 columns we can generally count on about twice that much copy being run by local merchants who pick the copy up later, put it over their own signature and compliment the California Committee for Voluntary Health Insurance on putting on a drive in that county. The most popular source of support in that has been from the druggists. The druggists of one community after another have followed up on that advertising, sometimes taking our own mats, cutting out our name, and putting in their own. It has been very beneficial, not only from the point of view of drawing in direct responses from the advertising but it has done something which we have never before been able to accomplish in the state. We have 700 newspapers, a great many of them small weeklies. Never before have we been able to get real support from the newspapers because the answer constantly comes back "Why should we give the doctors any support when they don't advertise and chiropractors do?" We now have an answer to that. When we started our campaign we went to the California Newspaper Publishers' Association and said "Gentlemen, we are going to spend a lot of money with the newspapers. We are going to advertise in every one of the 700 newspapers in California. Each of the 700 papers in the state is receiving a minimum of 100 column inches of advertising in a period of twelve months. We have found the response from the editors, in publicity, has been far beyond anything that we expected when we started the campaign.

Dr. Weld: You pay for it all out of your own society?

Mr. Hunton: The financial support from the insurance companies has not been great. The California Medical Association is paying most of the freight.

Dr. Lewis J. Moorman, Oklahoma City: In Oklahoma many of us have long felt that doctors, in pursuit of science, have neglected the art of medicine; in other words, neglected the patient. Therefore we have lost the rating that the so-called good old family doctor used to have. Apropos of this, somebody recently asked me what had become of the good old family doctor. I replied "If you will find me a good, old fashioned family, I will produce a good, old fashioned family doctor." In keeping with the feeling that we are losing our hold on the public because we have become ultrascientific and have neglected to win the love and respect of the patient, we decided, through the avenue of advertising, to let the people know what modern medicine is doing for the modern public. Consequently we assessed our membership for the purpose of carrying on an advertising campaign, with a view of transmitting to the people, even in rural communities, information with reference to what modern medicine means to the people. We believe that is the best way to combat such proposed measures as the Wagner-Murray-Dingell bill. Already these advertisements have appeared in our leading daily papers and in our weekly country town papers, and we have had very favorable editorial comment.

SECRETARIES AND EDITORS

Dr. Ray T. Woolsey, Salt Lake City: We have newspapers in Salt Lake City and, very peculiarly, we get newspaper space covering modern day advances of medicine, about two and one-half to three columns in the morning paper of Salt Lake City that has a statewide circulation, without cost to the medical profession. We prevailed on the editor-manager of the morning paper there to assign a reporter who had been covering state conventions and who is rather conversant with medical subjects, who has the ability of converting medical terminology to language that the lay public can understand, and writing these articles after interviewing doctors in various phases of medicine. We find a great tendency for some of the people in our country to board an airplane now, a train, travel east and get back to the large clinics, only to find out, after they have gone through the mill, that they were sent back home because the doctors at home could do pretty nearly as much for them as they could do in the large clinics.

This thing was started primarily to try to let the people of Utah and the intermountain territory know that there were doctors in that territory who could do just as much for them as could be done in the larger clinics in the Middle West. I think it is paying dividends, because we find that people are staying at home now and have faith in their local doctors. We are carrying it even so far as to encourage the people to stay in the small town. We feel that, if we are going to get doctors to stay in the small towns, in the valleys in between the mountain ranges in Utah and Idaho, we are going to have to keep the people there and let them go to their doctor in that area. On that basis, these articles are written by this editor and by this reporter. We haven't been able, of course, to do anything in regard to fighting the costs, as Mr. Hunton from California said, because we don't buy advertising space, but I think we will start doing that, just so we get editorial support. We did get support from the newspaper against the Murray-Wagner-Dingell bill. Whether they were rallying behind medicine or their own private interests, I don't know. But we are getting our space in Salt Lake City through the graciousness and the public spirited attitude of the owners and managers of our local papers.

Mr. James G. Burch, Connecticut: I have been public relations counsel for the Connecticut State Medical Society since the fifteenth of August. We have done nothing as yet in advertising in Connecticut newspapers. Our main program has been to study thoroughly, first, the attitude of all our editors. I have visited every editor in the state except, perhaps, a dozen editors of weekly newspapers. We have twenty-one daily evening papers, six morning papers and a half dozen Sunday papers. On this matter about which I have been asked to talk with you the cultivation of our wire services, we find that the wire services in Connecticut cooperate very closely, practically without request, on a pure basis of the value of the news. If our story is important enough —and we feel this way about it now, we would prefer to try to get over the Associated Press and United Press hurdles. We feel that if the wire service will accept our story the newspaper editor, when it comes through on the teletype, cannot fail to accept it. We also use the names of physicians who are connected with the story in any way. That is an encouragement to the local paper to use the story. However, we have had occasions when general stories were used very widely throughout the state, for instance, on the subject of medical care for veterans. In developing the stories on that subject, we carefully went into it and spent quite a bit of time determining how we were going to tell the story before we got our final draft.

Oftentimes a newsman will come in and write the story, but you mustn't forget that he is writing for the newspaper. If you have some very important section of the story which you wish to use as a lead and to emphasize, then you must study the story thoroughly, and the entire situation, to see that when you suggest that to the newspaperman it is a legitimate lead, that he doesn't get the idea that you are trying to slant the story, that you are trying to be unfair, that you are trying to tell him what he is going to write in his paper, or that, in any way, you are trying to censor the news. Most newsmen are sensitive about that. If you think these things out when you send a story through, and the story is written, you will find that, when it is developed properly, the newspaper will not only run it but give good space to it. In our state we have between 225,000 and 250,000 veterans of all wars. In writing the story of their medical care we developed the phrase "home town medical care for veterans." All through these stories, once that key is set, each time we use a story on the medical care of veterans we repeat "home town medical care plan." It is a local program. It moves, in line with our general program, to bring the problems back home to the people, where they then can become acquainted with them and understand them more thoroughly than some of the problems in the national field. Then the road to improvement seems much clearer to them.

COOPERATIVE MEDICAL ADVERTISING BUREAU

Chairman Price: We will pass on to another group of questions about the Cooperative Medical Advertising Bureau.

Mr. Jackson: The standardization of colors has been a difficult task for all the journals to solve. I have prepared a chart showing a variation of eight colors, two shades of red, medium brown, orange, sky blue, deep blue, green and yellow. With the use of screen and ben days we get a variation for each color. We are going to have these prepared in small pamphlets. After the first of the year we hope to send half a dozen copies to each of the journals and to the advertisers and agencies using color. So, during 1947 we are going to ease up that difficulty. They will just have to specify our deep red or bright red or orange or yellow, and the printers of The Journal office will know what the advertiser wants. "What are the advertising prospects for 1947?" The prospects are good. The contracts in and on record amount to $535,000. The anticipated renewals, when they expire during the year, amount to about $105,000. That brings the total of about $630,000.

Question: "How many journals have had an increase in printing costs this year? How many journals have had a 10 per cent or less increase?" It looks like nine. "How many have had between 10 and 20?" Thirteen. "How many have had more than a 20 per cent increase in printing costs this year?" Two.

STATE AND COUNTY SOCIETIES

Question: "What technic is most successful in interesting the individual physician in the problems of organized medicine and in securing his active participation in the work of his county and state medical societies?"

Dr. Anderson: I don't feel any particular qualifications for answering that question except from a limited experience that I have had in field work. I know that many of our state societies have done a good job in field work. I think that is the answer. I don't believe that you can get the ordinary practicing physician keenly interested in problems of the state association or even of his county medical society unless you get him across the table from you and get him to state his complaints and then have a free-for-all discussion. In Texas we are getting ready for one of the hardest legislative battles we have had in a long time. We are wanting to change our licensure setup. We have a board of medical examiners on which osteopaths are represented, also homeopaths, eclectics and regulars. We are going into our state legislature in January in an effort to change that setup and have separate boards, with a basic science board that will screen them. To sell that legislation, we first had to be sure that we could activate our own members, that they would be familiar with it. So, my experience in connection with field work has been largely that. I visited forty-six county medical societies, talking to them in groups, small as well as large societies. I asked any one who had any complaint about how his state society was being run or if he had any criticism of the American Medical Association, to speak up. That experience has taught me that what is more needed to activate individual physicians in their interest in county, state and national organization is good field work.

Mr. Meadors: The most direct and immediate source of stimulating activity by the individual physician is to give him something specific to do. There will be some occasion in connection with some county or state program in which you can call on some specifically designated physicians in the various counties to supply you with certain information, to contact members of their society. It has been our experience, almost without exception, that our request for such information from any part of the state has met with immediate cooperation and with stimulated interest on the part of those whom we contacted. Second—and this fits in with what Dr. Anderson just said—secure the opportunity to talk across the table, or frankly in a meeting of the group, and explain to them what you are trying to do and their part in it.

Dr. P. E. Blackerby, Louisville, Ky.: Would you briefly describe the operation of your statewide committee on behalf of your medical school, just how it functions?

Mr. Meadors: The committee originally consisted of seventeen, including a member from each of the districts, the officers, including the director of public relations and counsel. Shortly after it was appointed a meeting was called by the president in the capital city of our state, at which the cause of the medical college was presented fully. A short time later the committee met in Charleston, went over the plan and facilities of the medical college, a personally conducted tour, you might say, by the dean and members of the faculty, had lunch with the trustees of the medical college and learned what they needed in the way of physical improvement. In the meantime some agitation had arisen outside the profession for removal of the college from Charleston, where it had been throughout its history, to Columbia. In order to be perfectly fair a meeting of the committee was arranged for Columbia a few weeks later, at which the legislative delegation of Richland County, in which Columbia is situated, was given a full hearing. All the committee meetings were executive. Following each meeting a release was given to the press. The public hearing to which I have just referred was not, of course, executive, but immediately following it the committee went into executive session and determined that it would not recommend removal of the college but its expansion in Charleston. That announcement was given clearly to the press. That completed the preliminary activities. Then when it was enlarged to a committee of forty-six, including a member from each county medical society, each of those members was requested to contact personally the members of the legislature in his county, individually, as a member of the committee himself, or that he have some other physician in the community do so or some personal friend who was not a physician and had a direct contact with the member of the legislature. All of that was going on previous to the meeting of the general assembly. The stage was all set by the time the general assembly convened. Then we kept in touch with the situation, did what conservative lobbying might be done in the meantime.

On the weekends, this committee continued to be active in the home communities of the members of the general assembly. I think that about sums it up.

THE BASIC SCIENCE AND COMPOSITE BOARD

Dr. Stewart G. Thompson, Florida: In Florida the Basic Science Board and the Board of Medical Examiners are operating nicely. A composite State Board of Medical Examiners was established. On that board were representatives from regular doctors, homeopaths and eclectics. A number of years later the statute was amended to eliminate the stated proposal of appointees to the composite board from the three branches, so that now the ten members to the State Board of Medical Examiners can be appointed from medical doctors who hold licenses to practice in the state. This procedure has worked out very satisfactorily for a number of years.

A state examining board in the basic sciences was brought up at many meetings of the state legislature over a period of ten years. All bills proposing to include representatives from chiropractors and naturopaths were defeated. Finally, a bill was proposed for a Board in Basic Sciences with members appointed by the Governor from the professors of the institutions of higher learning. This Basic Science Board has been in operation for a number of years and has been satisfactory. The State Board of Medical Examiners require all applicants to have first passed State Board of Basic Sciences before being eligible to take the examination of the State Board of Medical Examiners. The reasons are obvious. Before this Basic Science Board was in existence, it was possible for naturopaths and chiropractors to receive a license in the state without first having had the proper education and training.

Dr. Walter E. Vest, West Virginia: I hear from some of those who have taken your basic science board examination that the trouble with it, from the standpoint of the medical candidate, is that the basic science board does not know enough differential diagnosis, between pure science and science as applied to medicine.

Dr. Thompson: The basic science examination has been a wonderful thing in our state. The uneducated men just cannot pass it. I don't know of a single naturopath or chiropractor who ever passed the basic science examination.

Dr. Holman Taylor: Did I understand you to say that you have separate boards for the separate branches of the healing arts, the so-called schools?

Dr. Thompson: Yes, sir.

Dr. Taylor: Do those enabling acts setting up those boards require that the applicants for license, at the hands of the board, keep to their little special sort of practice, cultism? In our state we tried this basic science business at the last session of the legislature. The osteopaths set up a bill that gave them every advantage and every responsibility that was given to the unlimited license or M.D. group. What steps do you take to see to it that that sort of thing doesn't happen? How do you require that these separate boards confine their examinations to that peculiarity and confine their responsibility? When it becomes a law, the osteopaths claim to do everything the doctor of medicine does when he introduces his bill. How do you prevent them from enacting that into law? The legislators tell us to "wait a minute." They ask "What business is it of yours?" We tell them but they say "Well, we gave you yours; we will give them theirs." So the osteopaths show up with the same sort of responsibilities, the same sort of opportunities, prerogatives and privileges that the educated doctor has. How do you go about stopping that?

Dr. Thompson: If they introduce a bill we don't like we get a copy of it that day. We don't wait until they get past second or third reading. If there is something in there that the doctors don't want, they have their senator or representative get up and amend it and take out the things we don't like. You have to stay there and fight to the finish. The background of it is this, which is the most important thing of all. Before the legislature meets, we try to find out who the family physician is of each senator and each representative. He will listen to his family physician. If you can educate your family physician on what is necessary in medicine, then he can talk to his senator and his representative, and, when it comes to the floor, more than half of your troubles are past.

PUBLISHING NAMES AND ADDRESSES OF OFFICERS

Question: "Would it be possible to publish both the medical and the executive secretaries' names and addresses, in view of the fact that many states now have two secretarial officers?

"Would it be possible for the A. M. A. to publish annually to the state secretarial officers the names and addresses of all county society secretaries?"

Dr. Lull: I think it would be possible to publish the names and addresses of both secretaries in the program. As far as The Journal is concerned, I would have to consult Dr. Fishbein, and I have grave doubts if that could be published in The Journal, because of lack of space. We can supply to the state secretaries a list of all county society secretaries once a year. They change often. I might remind the state secretaries that our lists aren't up to date because sometimes the secretaries of the state societies don't keep us informed of the changes in these officers.

COSTS OF RADIO DRAMATIZATIONS

Question: "Would you please discuss the costs of the A. M. A. radio dramatizations?" We are interested in what it might cost a state society in round figures to employ professional talent to create radio dramatizations.

Dr. W. W. Bauer: The answer to that question depends, to some extent, on where you are and whether or not you are working in stations where union rates govern. First you have to have a script. Script writers get prices depending on their reputation. The very least that you could expect to buy a script for a fifteen minute dramatization is from $50 to $75; for a thirty minute dramatization from $100 up. The cost of actors under the American Federation of Radio Artists' scale is in two general classifications: first, the sustaining or nonrevenue program, in which your dramatizations would fall; second, the commercial. Ordinarily the commercial would not concern you, but there is under negotiation at present a demand of the American Federation of Radio Artists that there shall be an elimination of the distinction between sustaining and commercial programs. If that bargaining demand is granted by the networks and the recording companies, then you will have to pay the commercial rates. The sustaining rate is, for a fifteen minute program, $15 plus 10 per cent, plus 10 per cent, plus 20 per cent. It was $15 plus 10, plus 10 until the recent negotiations. Now it is plus 20 on the total. That is the sustaining minimum. For a thirty minute program it starts at $25 plus 10, plus 10, plus 20. If you go into commercial, then you would have to pay, in addition, for the rehearsal time. I am not clear as to all the details, but rehearsal time starts at a basic $6.60 per hour, and it takes three hours to rehearse a fifteen minute program and five hours to rehearse a thirty minute program. That is in general, what you might expect to pay.

In round numbers, we figure that our fifteen minute dramatizations which we have been distributing to you on platters will cost us, for a series of thirteen programs, roughly, $5,000 for the masters. From there we make our pressings, and it is the pressings that you get. So that, if you go into dramatization at all, you must anticipate costs that will far exceed any other technic. Even the interview technic is not without its costs, because we must have a script. To diversify the program we must either bring doctors to us at our expense to record in Chicago or we must send our interviewer to where the doctor is. We have distributed to you on platters some musical programs. There, again, you run into costs of script; you must have an American Federation of Radio Artists announcer and you must have a union musician if your platters are going to be recorded and are going to be distributed to stations where the staff is unionized. I should say that you could hardly do much in a state medical society program of dramatizations, whether you record them or whether you put them on the air alive, with less than $10,000 for thirteen weeks. If you are doing a thirty minute program for thirteen weeks, and it will not pay you to do it for any less than thirteen weeks, you will have to figure on from $400 to $500 a week for your costs. I am talking only about production costs. There is no estimate for time on the air, because you are not expected to pay for time on the air. Your time should be given by the radio station in its contribution to a joint public service.

Official Notes

THE ATLANTIC CITY SESSION

Entry Blanks for the Thirty-First Annual Golf Tournament

The American Medical Golf Association will hold its thirty-first annual tournament at the Atlantic City Golf Club, Atlantic City, N. J., June 9, on the occasion of the centennial of the American Medical Association. The tournament will be an eighteen hole competition, and about one hundred prizes will be awarded at the dinner at the club. The chairman of the golf committee is Dr. Gene A. Gruhler, Atlantic City. Any member of the American Medical Association interested in playing at the tournament may secure entry blanks by writing the secretary-treasurer of the golfing association, Bill Burns, 2020 Olds Tower, Lansing 8, Mich

Washington Letter

(From a Special Correspondent)

Feb 27, 1947.

Senator Murray to Reintroduce Wagner-Murray-Dingell Compulsory Health Insurance Bill

The Wagner-Murray-Dingell bill for compulsory health insurance, which failed to reach a vote last year, will again be presented to Congress by Senator Murray, Democrat of Montana, one of its original sponsors. A battle is indicated between proponents of compulsory insurance and sponsors of a voluntary plan, introduced by Republican Senators Taft of Ohio, Smith of New Jersey, Ball of Minnesota and Donnell of Missouri The Democratic measure, first supported by President Roosevelt and later by President Truman, would provide health insurance for all wage earners except federal and state and railroad employees and their dependents. Participants would receive medical care paid for by taxation in some form. Senator Wagner told Congress that 3 billion dollars would set up the plan and that it would cost from 1½ to 3 million to administer.

Remedies for Incurable Diseases Sought Through Atomic Energy

Dr. Elizabeth Smith Friedman, research analyst, told a luncheon meeting that atomic energy research seeks to provide remedies for heretofore incurable diseases. She said that private research is being pressed at two national laboratories in the East and Middle West, with a third planned for the Far West. Universities in these areas are sponsoring atomic research in medicine, chemistry, metallurgy, ceramics and all phases of nuclear physics. The speaker asked for public pressure on Congress and the United Nations to agree on a working United Nations atomic energy commission Official Washington turned out *en masse* for the preview of the atomic bomb film "The Beginning of the End."

Tests of New Chemical Compounds at National Cancer Institute

Members of the National Advisory Cancer Council revealed that the National Cancer Institute has developed new chemical compounds for treating cancer and they are being applied to human and animal sufferers from the disease Some success in destroying malignant growths in animals has been reported. Dr. Robert S Stone, professor of radiology, University of California Medical School, said that development of atomic energy had provided cancer specialists with new materials for cancer research. Radioactive phosphorus and iodine and substances derived from the Oak Ridge atomic pile are being tested in research

Employment of Practical Nurses in Hospitals

A change in the policy of nurse examining boards, which have discouraged employment of practical nurses in hospitals, may result from the current serious shortage of nurses In the District of Columbia proposals to relieve the current nurse and auxiliary nurse shortage by training practical nurses are being studied by hospital superintendents Only Doctors Hospital now offers practical nurse training, which was encouraged in a recommendation of the American College of Surgeons. Recently about 20 practical nurses were employed at Providence Hospital to meet the shortage. Some critics attribute the lack of graduate nurses to stiff requirements for training, time involved and low pay as compared with salaries paid business women.

Doctors Asked to Join with Lawyers in Combating Court Problems

Doctors were urged to try preventive medicine in the field of crime by District Court Chief Justice Bolitha J. Laws in an address before the annual alumni reunion of George Washington University Medical Society. He urged doctors and lawyers to work together in solving problems of alcoholism, divorce and criminal psychoses. He believes that medical examinations might reveal which are potential criminals

Status of St. Elizabeths Hospital

Senator Taft explained through a spokesman that he did not intend to transfer supervision of St. Elizabeths Hospital to the Public Health Service, as provided in the original draft of the national health bill. The senator was of the impression that the hospital was under the Public Health Service. It is his intention to leave its status unchanged while transferring the parent agency to the proposed federal health authority.

Closed Hearings on Lemke Antivivisection Bill

The House of Representatives District subcommittee on health, education and recreation held closed hearings on the Lemke antivivisection bill, with subsequent hearings to be open.

Coming Medical Meetings

Alabama, Medical Association of the State of, Birmingham, April 15-17. Dr. Douglas L. Cannon, 519 Dexter Ave., Montgomery 4, Secretary.

American Association for the Study of Goiter, Atlanta, Ga., April 3-5. Dr. Thomas C. Davison, 478 Peachtree St., N. E., Atlanta 3, Secretary.

American Association of Anatomists, Montreal, Canada, April 3-5. Dr. Normand L. Hoerr, 2109 Adelbert Road, Cleveland 6, Secretary.

American Laryngological, Rhinological and Otological Society, St. Louis, April 25-26. Dr. C. Stewart Nash, 288 Alexander St., Rochester 7, N. Y., Secretary.

American Otological Society, St. Louis, April 21-22. Dr. Gordon D. Hoople, 713 E. Genesee St., Syracuse 2, N. Y., Secretary.

Arkansas Medical Society, Little Rock, April 17-19. Dr. William R. Brooksher, 602 Garrison Ave., Fort Smith, Secretary.

Chicago Medical Society Annual Clinical Conference, Chicago, March 4-7. Dr. Willard O. Thompson, 30 N. Michigan Blvd., Chicago 2, Secretary.

Dallas Southern Clinical Society, Dallas, Texas, March 17-20. Dr. Glenn D. Carlson, 1133 Medical Arts Bldg., Dallas, Secretary.

Florida Medical Association, Miami, April 20-23. Dr. Robert B. McIver, P. O. Box 1018, Jacksonville, Secretary.

Georgia, Medical Association of, Augusta, Bon Air Hotel, April 22-25. Dr. Edgar D. Shanks, 478 Peachtree St. N. E., Atlanta, Secretary.

Iowa State Medical Society, Des Moines, April 16-18. Dr. John C. Parsons, 406 Sixth Ave., Des Moines 9, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 22-23. Dr. W. Houston Toulson, 1211 Cathedral St., Baltimore 29, Secretary.

Michigan Postgraduate Clinical Conference, Detroit, Book Cadillac Hotel, March 12-14. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

Mid Atlantic Section, American Urological Association, Washington, D. C., Hotel Statler, March 20-22. Dr. Theodore R. Fetter, 255 S. 17th St., Philadelphia, Secretary.

Missouri State Medical Association, Kansas City, March 30-April 2. Mr. Thomas R. O'Brien, 634 N. Grand Blvd., St. Louis 3, Executive Secretary.

New Jersey, Medical Society of, Atlantic City, Haddon Hall, April 22-24. Dr. Alfred Stahl, 160 Lincoln Ave., Newark 4, Secretary.

Northern Tri State Medical Association, Detroit, April 8. Dr. John L. Stifel, 232 Michigan St., Toledo 2, Ohio, Secretary.

Oklahoma State Medical Association, Tulsa, Mayo Hotel, April 22-25. Mr. R. H. Graham, 210 Plaza Court Bldg., Oklahoma City, Executive Secretary.

Southeastern Surgical Congress, Louisville, Ky., Brown Hotel, March 10-12. Dr. Benjamin T. Beasley, 45 Edgewood Ave. S. E., Atlanta 3, Ga., Secretary.

Southwest Allergy Forum, Shreveport, La., March 31-April 1. Dr. Sim Hulsey, 505 Medical Arts Bldg., Fort Worth, Texas, Secretary.

Tennessee State Medical Association, Memphis, April 8-10. Dr. W. M. Hardy, 706 Church St., Nashville 3, Secretary.

Medical Legislation

MEDICAL BILLS IN CONGRESS

National School Health Services Act

Representative Howell, Illinois, has introduced H. R 1980, a bill to provide for the general welfare by enabling the several states to make more adequate provision for the **health of school children** through the development of school health services for the prevention, diagnosis, and treatment of physical and mental defects and conditions The bill proposes to authorize an appropriation of $12,000,000 for the fiscal year commencing July 1, 1947, the sum of $18,000,000 for the next fiscal year and for each succeeding fiscal year such sums as may be necessary. These sums are to be made available, it is proposed, to enable the United States, through the Federal Security Agency, to cooperate with each state in carrying out the objectives of the legislation. A National *Advisory Committee on School Health Services will be created to consist* of twelve members appointed by the Federal Security Administrator on recommendation of the Chief of the Children's Bureau, the Commissioner of Education and the Surgeon General of the Public Health Service. *One half of the members will be selected from panels of at least five* names each submitted by representative national organizations and at least three members shall be doctors of medicine and at least one a doctor of dental surgery The Federal Security Administrator will be required to administer the legislation through the Children's Bureau, utilizing the services of the Office of Education in matters involving state education agencies and pertaining to the training and supervision of school personnel

Army Women's Medical Specialist Corps

A bill introduced by Representative Smith, Maine, H. R 1943, proposes to establish a **permanent Nurse Corps** of the Army and Navy and a **Women's Medical Specialist Corps** in the Army to consist of a Dietitian Section, a Physical Therapist Section, and an Occupational Therapist Section

Alcoholic Clinic

Representative Hebert, Louisiana, proposes by H R 496 to authorize the Commissioners of the District of Columbia to establish and equip a clinic in connection with either some existing hospital or with some correctional institution or other facility for the diagnosis, classification, hospitalization, confinement, treatment, and study of persons who are found to be **chronic alcoholics** by the courts of the District of Columbia.

Miscellaneous

A bill introduced by Representative Eberharter, Pennsylvania, H. R. 1992, proposes to give employees of religious, charitable, scientific, literary, and educational institutions the benefits of coverage under **the Social Security Act**, the Federal Unemployment Tax Act, and the Federal Insurance Contributions Act

H R 1950, introduced by Representative Larcade, Louisiana, contemplates that veterans pursuing educational and training courses in public institutions **shall receive the books, supplies, and other equipment** they would receive if they pursued similar courses in private institutions

A bill introduced by Representative Smith, Maine, as H. R. 1982, proposes to revise the **Medical Department of the Army.**

The establishment of a **veterans' hospital** in central Alaska is proposed by H R 1879, introduced by Representative Hagen, Minnesota

STATE LEGISLATION

Arizona

Bill Introduced.—H. 163 proposes to require each applicant for a ***marriage license** to present* a certificate signed by a duly licensed physician stating that the applicant is free from syphilis and other venereal diseases, tuberculosis and any other chronic or malignant infectious disease

California

Bills Introduced.—A. 1380, to amend the welfare and institutions code, proposes to provide space in existing mental hospitals for professional services to be rendered by **licensed chiropractors** only and proposes that all such professional services shall be consistent with the theory and principles of the science of chiropractic *A. 1481 proposes the enactment* of a **state hospital survey** and construction act requiring an inventory of existing hospital facilities and the development of a state plan for the construction of additional needed hospital facilities. The proposal would also require the appointment of an advisory hospital council and would authorize the state department of public health to apply for and accept federal funds granted for assistance in state hospital construction *A. 1500 and S 788 propose* the enactment of a **prepaid health service act.** A 1501, to amend the vehicle code, proposes to exempt from certain provisions thereof **surgeons and chiropractors** traveling in response to an emergency call Physicians are already exempt. A. 1582 proposes to require all persons ***employed as food handlers** to* obtain a certificate from the state board of public health stating that they are not infected with any communicable disease A. 1664, to amend the law relating to **premarital examinations**, proposes to authorize chiropractors to make the required examination. A. 1808, to amend the health and safety code, proposes that no district hospital shall provide by rule, regulation or by-law any **discrimination against a person** on account of race, creed or color or any discrimination which directly or indirectly would deny free choice of a physician or surgeon S 763, to amend the insurance code, proposes to authorize the formation of **medical and hospital service associations.** S 808, to amend the health and safety code, proposes to require every licensed physician and surgeon or other person engaged in prenatal care of a pregnant woman, or attending such woman at the time of delivery, to **obtain a blood *specimen of*** such woman at the time of the first professional visit or within ten days thereafter and to submit such sample to an approved laboratory for a laboratory test for syphilis

Connecticut

Bills Introduced.—*H. 436 proposes to appoint the state department of* health as the agency to administer **the hospital survey** and construction act H 550, to amend the medical practice act, proposes to grant the board discretion in accepting **licenses from other states in** lieu of examination H 551, to amend the law relating to the **practice of osteopathy** proposes to require certification by the board of healing arts of osteopathic national board diplomates applying for a license without examination H 553, relating to the **practice of osteopathy**, would require applicants for a license by reciprocity to meet the requirements of the state board of healing arts before being granted a license without examination H 552, to amend the **law relating to naturopathy**, proposes, among other things, to provide that a person who has been refused a certificate by the state board of healing arts does not qualify for a license without examination by the board of naturopathic examiners H 705, to amend the **law relating to chiropractic**, proposes that no person who has been refused a certificate by the state board of healing arts may qualify for a license without examination by the board of chiropractic examiners S 168 proposes to extend the scope of services to be rendered by district and special laboratories to the examinations of **supposed morbid tissues** and other types of work S 170 proposes to broaden the scope of activities of the **bacteriologic laboratory** so as to conform with those of a modern public health laboratory. S 173 proposes to clarify definitions of standards as applied to **clinical thermometers.** S 291 proposes an impartial study for the purpose of establishing a scientific method of **health insurance** for the state. S. 405 proposes that no hospital receiving state aid shall employ **at a fixed salary a physician** who would compete with outside physicians by having patients referred to the hospital for services rendered by such physician

Illinois

Bills Introduced.—H 13 proposes the enactment of a **hospital licensing** and inspecting law. H. 67, to amend the law relating to criminal jurisprudence, proposes to make it **unlawful to dispose of the barbiturates** except on prescription of a person licensed by law to prescribe and administer barbiturates or delivered by such person to his patient in the course of his professional practice.

Indiana

Bill Introduced.—S 212, to amend the medical practice act, proposes among other things to authorize the board of medical examiners to accept examinations certified by the **national board as the examination** given to the applicant This would enable an applicant to be licensed in Indiana without having to wait until the regular examination given *by the Indiana board occurs*

Bills Passed.—S 67 passed the senate February 11. It proposes the free distribution of **blood plasma** throughout the state, for use in the control of disease, to persons in need who are too poor to pay for it themselves S. 213 passed the senate February 14. It proposes the **annual registration** of all persons holding an unrevoked license to practice the healing art in any form or manner.

Massachusetts

Bills Introduced.—H. 641 and H 1446 propose the enactment of a Massachusetts **cash sickness compensation act.** H 1419 proposes a law requiring the **semiannual physical examination of all food handlers** to determine the presence or absence of tuberculosis or other communicable disease the examination to be made by the health officer or his aides. H 1416 proposes the enactment of a voluntary system for the payment of hospital, surgical operation, sickness and bodily injury and maternity **benefits to employees.** S. 356 proposes the appointment of a commission to conduct a study relative to the **setting up of a state university** with an established medical center located in or near Boston

Montana

Bills Introduced.—H. 353, to amend the law relating to nonprofit corporations, specifically authorizes **the organization of corporations for** the purpose of defraying or assuming the cost of professional services, including services rendered by doctors of medicine or other professional licentiates recognized by the laws of the state of Montana, and/or services rendered by hospitals, health centers, clinics or sanatoriums S 100 proposes that each applicant for a **marriage license** shall present a certificate signed by a duly qualified physician licensed to practice medicine and surgery in any state or territory of the United States certifying that the applicant has been given an examination for the discovery of syphilis

Nebraska

Bills Introduced—Bill No 250 *proposes to provide for* the licensing, inspection and regulation of **hospitals** and related institutions within the state and to create a hospital licensing council. Bill No. 300 proposes to require **restaurant owners** to display a certificate from a licensed physician certifying that no person employed in such restaurant is affected with certain named diseases Bill No 541 proposes the appointment of a **state health committee** to advise with the governor on candidates for the office of director of health and to advise with the director on general policies affecting public health. Bill No. 380, to amend the medical practice act, proposes to **include an osteopath** on the board of medical examiners. Bill No. 408, to amend the section of the medical practice act referring to examinations, proposes to **exempt chiropractors therefrom.**

New Hampshire

Bills Introduced.—H. 206 proposes the enactment of a **compulsory sickness benefit plan.** H. 337, to amend the law relating to the practice of medicine, proposes to authorize the board to **register and license without examination** any applicant legally qualified to treat human ailments or practice medicine in any other state and who is honorably discharged from the armed forces if such veteran meets the requirements of section 10 and was engaged in the active practice of medicine in the armed forces, provided that licenses under this section shall be granted only to applicants who take up their residences in the state and shall expire on their removal from the state, and provided further that the provisions of the proposal would expire three years after the date of passage.

New Jersey

Bills Introduced.—A. 88, to amend the medical practice act relating to the requirement of **two years' internship,** proposes that in lieu thereof an applicant may serve one year of internship in an approved hospital plus one year's professional experience while a member of the Army, Navy or Public Health Service of the United States. A. 97, to amend the workmen's compensation act, proposes that an injured workman shall have the **right to select the physician,** surgeon or dentist by whom, and the hospital in which, he desires to be treated.

New Mexico

Bills Introduced.—S. 80, to amend the law relating to **osteopathic physicians,** proposes to eliminate therefrom the requirement that no plan for rendering medical services shall be adopted by any state, district, county, city or town which discriminates against osteopathic physicians and surgeons. S. 112, to amend the medical practice act relating to **the definition of "practice of medicine,"** proposes to add the phrase "or perform any act, the results of which shall be used for diagnosis." S. 115 proposes the creation of a state board of naturopathic examiners and defines naturopathy as follows: **"The term 'Naturopathy'** as used herein shall comprehend, embrace and be composed of the following named acts, practices and usages, as set forth in the Act of Congress of the United States, enacted February 7, 1931, H. R. 12169 defining Naturopathy. Diagnosis, and Practice of physiological and mechanotherapy, articular manipulation, corrective orthomaterial sciences of healing as follows,—The physiological and mechanical sciences such as pedic gymnastics, neurotherapy, psychotherapy, hydrotherapy, phototherapy, chromotherapy, vibrotherapy, thalmotherapy, and dietetics which shall include the use of foods of such biochemical tissue-building products and cell salts as are found in the normal body; and the use of vegetal oils and dehydrated and pulverized fruits, flowers, seeds, barks, herbs, roots and vegetables uncompounded and in their natural state."

New York

Bills Introduced.—A. 1234 and S. 1026 propose that no person shall be required to submit to a **physical examination** as a condition of securing employment. A. 1259, to amend the labor law, proposes the enactment of a **disability benefit law.** A. 1283, to amend the education law with respect to the definition of the practice of medicine, proposes to limit the **practice of x-ray** diagnosis, x-ray therapy or radium therapy as defined in the proposal to persons licensed to practice medicine. A. 1299, to amend the education law, proposes the creation of a board of **medical technologist examiners** and defines medical technologists and clinical laboratory technicians. A. 1395, to amend the education law, proposes that a license to practice **optometry** shall not permit the holder thereof to fit contact lenses except under the supervision of a duly licensed physician.

Bill Passed.—S. 167 passed the House February 17. To amend the law relating to the practice of **midwifery,** it proposes that as a condition to annual renewal of a license an applicant must submit evidence that she has attended and conducted one or more deliveries during the twelve months last passed.

North Dakota

Bills Introduced.—H. 127 proposes regulations for the licensing of **chiropractic hospitals** by the state board of chiropractic examiners. S. 237 proposes a law for the licensing, inspecting and regulating of hospitals in the state and for the appointment of a **hospital advisory council** to assist in the preparation of rules, regulations and standards for the licensing of hospitals.

Oklahoma

Bills Introduced.—H. 159 proposes to require various practitioners of the healing art to list **descriptive letters after their names** in order to designate the branch of practice in which they engage. S. 76 proposes to require prospective teachers to have **a medical examination** for the purpose of determining mental and physical qualifications, the mental and physical examination to be made by a physician authorized to practice medicine. S. 111, to amend the medical practice art relating to the requirement of **one year's internship** as a prerequisite to examination, proposes to require further that all applicants shall have served an internship of at least three months in one of the state hospitals for the insane or feebleminded.

Tennessee

Bill Enacted.—H. 234 has become chapter 9 of the Public Acts of 1947. It creates a **state licensing board** for the healing arts and defines healing art as "offering or undertaking to diagnose, treat, operate on, or prescribe for any human pain, injury, disease, deformity, or physical or mental condition." A person who desires to practice any specific branch of the healing art in Tennessee will now be required to obtain a license from this board after the applicant has passed the specific examination required of the specific examining board in the state.

Texas

Bills Introduced.—H. 217 (same as S. 161) proposes, among other things, that any physician duly licensed under the laws of Texas to practice medicine who, when an autopsy is ordered by a justice of the peace, **performs the autopsy** in good faith in the belief that the order of the autopsy is a valid order, shall not be held liable for damages in the event it should be determined that the order of autopsy made by the justice of the peace was for any reason invalid. S. 190, to amend the medical practice act, proposes to exempt therefrom persons who practice **physiotherapy** and confine their practice strictly to nonmedical treatment by electricity, massage and exercise and dietotherapy when confined to the regulation of diet and the use of food supplements.

Utah

Bills Introduced.—H. 216 proposes that an **optometrist** may be accepted in court as an expert witness on testimony relative to the diagnosis of the human eye and its appendages or any visual, muscular, neurologic or anatomic anomalies of the human eye and their appendages. S. 177, to amend the **premarital examination law,** proposes to authorize the required examination to be made by a licensed osteopathic physician and surgeon.

Vermont

Bills Introduced.—H. 75 proposes to repeal the existing medical practice act and to enact a new law for the **licensing of physicians, osteopaths and chiropractors.** H. 148 proposes an appropriation for the purpose of purchasing and maintaining **mobile health units** to be used by the state board of health in making medical, dental and psychiatric examination, of school children. H. 154 proposes to authorize the superintendent or managing officer of the Vermont state hospital to **cause an autopsy to be performed** on the body of any person who dies while a patient at such institution, the purpose of the proposal being to increase the knowledge of the causes of nervous and mental disorders and mental deficiencies.

Washington

Bills Introduced.—S. 158 proposes the creation of a **medical disciplinary board** to hear complaints for the revocation of professional licenses. S. 173 proposes the enactment of a **hospital survey and construction act** requiring a survey of hospital facilities in the state and the preparation of a plan for the construction of needed additional facilities. The proposal would require the appointment of an advisory hospital council and would authorize general collaboration with the federal government relative to the acceptance and expenditure of federal funds. S. 193 proposes the creation of a **sanipractic physicians' examining board** and defines sanipractic as "the science and art of applied prophylactic and therapeutic sanitation, which enables the physician to direct, advise, prescribe or apply food, water, roots, herbs, light, heat, exercises active and passive, manipulation, adjusting tissue, vital organs or anatomical structure by manual, mechanical or electrical instruments or appliances; or other natural agency, to assist nature restore a psychological and physiological interfunction for the purpose of maintaining a normal state of health in mind and body."

West Virginia

Bill Passed.—H. 9 passed the house January 31. To amend the medical practice act, it proposes to exempt therefrom the practice of **the religious tenets of any church** in the ministration to the sick or suffering by mental or spiritual means, provided sanitary and public health laws are complied with, no practices are used which may be dangerous or detrimental to life or health and no person is denied the benefits of accepted medical and surgical practices.

Wisconsin

Bills Introduced.—A. 161 proposes the appointment of a state board of **examiners in naturopathy** and defines naturopathy as "the prevention, diagnosis and treatment of human injuries, ailments and diseases by means of any one or more of the material methods or agencies of healing as taught by approved schools of naturopathy, said methods or agencies including dietetics, phytotherapy, vitamin or mineral or glandular food supplementations, irrigations, inhalations, external applications, physiotherapy and electrotherapy. The practice of naturopathy shall exclude the practice of medicine, surgery, obstetrics, osteopathy, chiropractic and the use of drugs. The practice of naturopathy shall exclude the treatment of cancer, tuberculosis, gonorrhea, syphilis, diphtheria, scarlet fever, typhoid fever, smallpox and fracture." S. 156, to amend the law relating to the **licensing of osteopaths,** proposes to require applicants for a license to practice osteopathy to have completed at least 12 months' internship in a reputable osteopathic hospital or its equivalent. S. 162 proposes to require all physicians to report immediately to the local health officer the name, age and address of every person diagnosed as afflicted with epilepsy or similar disorders characterized by lapses of consciousness. S. 170 proposes the creation of a mental health authority and the creation of a **state mental health commission.**

Wyoming

Bills Introduced.—S. 73 proposes the enactment of a state **hospital survey and construction act** requiring an inventory of existing hospitals and the development of a program for the construction of additional necessary hospital facilities. The proposal would also require the appointment of an advisory hospital council and provide for collaboration with the federal government in the application for and acceptance of federal funds to assist in hospital survey or construction within the state. S. 78 proposes the creation of a **medical practice act** for osteopathic physicians and surgeons. Under the terms of this proposal osteopathy means "a complete school of medicine and surgery based upon fundamental principals, some of which are different, in emphasis, from some of the principals as taught by other schools of medicine."

GOVERNMENT SERVICES

ARMY

ARMY AWARDS AND COMMENDATIONS

Brigadier General Charles B. Spruit

The Distinguished Service Medal has been awarded to Brig. Gen. Charles B. Spruit, U. S. Army, of Washington, D. C. Among his services the citation mentions these: As surgeon, United Kingdom Base, he performed meritorious and distinguished service in England from September 1944 to May 1945. In organizing and supervising operation of the medical units he divided them into seven geographic groups and assured the proper delineation of the functions and responsibility of the group hospitals. He implemented the plans for specialty hospitals to care for special types of cases and, by his own stimulating leadership, welded all the group staffs and his own staff into an efficient and smoothly working organization. Through his knowledge of the medical service and its operational requirements and by his exceptional organizational ability, General Spruit led the United Kingdom Base Medical Service to the attainment of its outstanding accomplishments. Dr. Spruit graduated from Harvard Medical School in 1915 and entered active military service in 1917.

Colonel Charles L. Baird

The Legion of Merit was recently awarded to Col. Charles L. Baird, M. C., U. S. Army, of Philadelphia for exceptionally meritorious conduct in the performance of outstanding services as commanding officer of the Fifth Evacuation Hospital from Dec. 17, 1943 to Feb. 28, 1945 in England, France, Belgium and Germany. The citation states that Colonel Baird labored for long periods of time in the organization, training and operation of his hospital to the end that it would give medical treatment of a high standard to patients. He constantly strove for additional improvements within his command. With no previous combat experience, and in spite of difficult conditions incident to the invasion, the hospital, under his capable supervision and direction, treated more than 18,000 casualties with the highest degree of efficiency. Colonel Baird's able leadership, astute judgment and professional wisdom were instrumental in the saving of many lives and the alleviation of much suffering. Dr. Baird graduated from the Medical College of Virginia in 1929 and entered the service July 1, 1930.

Colonel Leonard D. Heaton

The second Oak Leaf Cluster to the Legion of Merit has been awarded to Col. Leonard D. Heaton, M. C., U. S. Army, for performing exceptionally meritorious services as commanding officer of the 802d Hospital Center from November 1944 to June 1945. The citation recounts that by his unusual organizational ability he established many widely separated medical units in England into a closely knit and highly efficient hospital center. By his forceful leadership he ably directed a highly complex operation to outstanding success. Dr. Heaton graduated from the University of Louisville, Ky., in 1926 and entered the military service on Aug. 1, 1926.

Lieutenant Colonel Charles W. Elkins

The Legion of Merit was recently awarded to Lieut. Col. Charles W. Elkins, M. C., A. U. S., of Cleveland, who was chief, neurosurgical section, Newton D. Baker General Hospital, Martinsburg, W. Va., from September 1944 to December 1945. Lieutenant Colonel Elkins achieved an outstanding record in the rehabilitation of paraplegic patients. In addition to his brilliant surgery, states the citation, his contribution to the dissemination of knowledge and skill in his field will be of lasting peacetime benefit. Dr. Elkins graduated from Western Reserve University School of Medicine in 1937 and entered the service Jan. 15, 1942.

Lieutenant Colonel Richard H. Meade

The Legion of Merit has been awarded to Lieut. Col. Richard H. Meade, M. C., A. U. S., of Chicago, who distinguished himself as chief of the thoracic surgery section in the Kennedy General Hospital, Memphis, Tenn., from February 1943 to December 1945. His achievements were stated in the citation to reflect unusual surgical skill, high qualities of leadership and unselfish devotion to the care and treatment of the sick and wounded. Dr. Meade graduated from Harvard Medical School in 1921 and entered the military service on May 16, 1942.

Captain John E. Lamy

The Silver Star has been awarded to Capt. John E. Lamy, M. C., A. U. S., of Kansas City, Mo., who on April 6, 1942 displayed gallantry in action on Bataan, Philippine Islands, as surgeon for the Third Battalion, 57th Infantry (PS). While in bivouac, says the citation, the battalion was subjected to exceptionally heavy attack by enemy dive bombers and artillery fire, and casualties were heavy. Captain Lamy suffered an eye injury from a bomb fragment, but despite his injury and the fury of the air attack he provided medical aid to the wounded as they were brought to the aid station. Dr. Lamy graduated from McGill University Medical School in 1937 and entered the military service in September 1940.

Captain Arthur L. Abbett

The Bronze Star Medal was recently awarded to Capt. Arthur L. Abbett, M. C., U. S. Army, of San Leandro, Calif., for meritorious achievement in connection with military operations against the enemy at Bougainville, Solomon Islands, on April 16, 1944. The citation gives further details: During the attack on Hill 500, because of the intensity of enemy fire, more casualties were sustained than the litter teams could efficiently handle. Under intense enemy machine gun, mortar and rifle fire Captain Abbett, a battalion surgeon, with complete disregard for his own personal safety, went forward to the front line to supervise and assist in the recovery of wounded men. His presence on the front line and his action in aiding the wounded were of great value to the morale and fighting efficiency of the troops. Dr. Abbett graduated from the University of Minnesota School of Medicine in 1936 and entered the service Jan. 3, 1942.

Captain Jack A. Comstock

The Bronze Star Medal has been awarded to Capt. Jack A. Comstock, M. C., A. U. S., of Roswell, N. M., formerly of Boulder, Colo., who, as assistant receiving and evacuation officer at General Hospital Number Two, Bataan, rendered meritorious service from Jan. 1 to April 9, 1942. The citation credits him with working long hours and exercising a skilful and sympathetic handling of the sick and wounded. Through his outstanding professional ability and resourcefulness, Captain Comstock contributed greatly, under extreme difficulties and with limited supplies, to the medical care of patients. Dr. Comstock graduated from the University of Colorado School of Medicine in 1938 and entered military service Jan. 27, 1941.

Captain Karl Pickard

The Bronze Star Medal has been awarded to Capt. Karl Pickard, M. C., A. U. S., of Brooklyn, who, according to the citation, performed meritorious service in England from December 1943 to March 1945. As venereal disease control officer, in addition to his assigned duties as chief of medicine, Tenth General Dispensary, Captain Pickard by his untiring efforts, ingenuity and leadership made a substantial contribution to the success of the medical mission in the European Theater of Operations. Dr. Pickard graduated from Long Island College of Medicine in 1935 and entered the military service July 10, 1940.

MEDICAL OFFICERS RELEASED BY THE NAVY

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

California

Cameron, George H.	San Francisco
Cary, William S.	San Francisco
Castro, Amos J. Jr.	Vallejo
Clary, David T.	Eureka, Calif.
Collins, Joseph C.	Fresno
De Bell, Daryl E.	San Francisco
Defoe, Edward C. Jr.	Richmond
deMailly, Robert G.	San Francisco
Driscoll, John A.	San Francisco
Duffield, Leland D.	San Francisco
Gerow, Elwyn C.	Lafayette
Herman, Frederick F.	Los Angeles
Hodge, Kenneth E. C.	Florin
Kent, James E.	Los Angeles
Livingston, Robert B.	Hayward
Loehr, Robert A.	San Jose
McGee, John	Sutter Creek
McKinnon, Donald A.	Sacramento
Martin, Lemuel R.	San Francisco
Nutting, Arnold A.	San Rafael
Parkinson, Gaylord B. Jr.	San Diego
Peter, Frank J.	Turlock
Reinhardt, Paul H.	San Francisco
Sheldon, Robert W.	Bakersfield
Sherman, Robert S. Jr.	San Francisco
Shidler, Frederic P.	San Francisco
Shirley, Edward T.	Seal Beach
Thompson, Walter S. Jr.	Los Angeles

Connecticut

Feeney, Thomas M.	Hartford
Fisher, Robert L.	Greenwich
Geanuracos, George J.	Bridgeport
Gessay, Louis H.	Rockville
Goodyer, Allan V. N.	Stamford
Marino, Frank S.	Middletown
Mulville, Maurice F. Jr.	Norfolk
Pulaski, John E.	Meriden

Georgia

Derrick, Howard C. Jr.	Oglethorpe
Epting, Monroe J.	Savannah
Helms, William C.	Atlanta
Langston, Eugene D. Jr.	Atlanta
McGuire, Thomas H.	Greensboro
Reed, John H. Jr.	Gainesville

Illinois

Honsik, Cyril J.	Oak Park
Jones, Edward A.	Park Ridge
Kotcher, George P.	Westville
Lieb, Bernard	Chicago
Marino, John J.	Chicago
Meeker, Cornelius S.	Chicago

Indiana

Gossom, Donn R.	Terre Haute
Helmer, John F.	South Bend
Hollingsworth, Maurice C.	Indianapolis
Shelley, Edward S.	South Bend
Shreeve, Walton W.	North Delaware
Smith, Charles G.	Indianapolis

Kansas

Chaffee, Dean C.	Solomon
Crary, John E.	McPherson
Maxfield, Russell J.	Garden City
Nelson, Richard O.	Lawrence
Satterlee, Robert L.	Macksville

Kentucky

Brown, William M.	Corbin
Lay, William R. Jr.	Barbourville
Marcum, Max H.	Louisville
Reynolds, William S. Jr.	Louisville

Massachusetts

Balkus, Vincent A.	Lynn
Bennett, Darwin E.	Fitchburg
Carrigan, Paul W.	Boston

Massachusetts—Continued

Illingsworth, Myles H.	Cambridge
Kaye, Maxwell B.	Canton
O'Malley, Robert D.	Holyoke
Roe, Benson B.	Boston
Ryan, George A.	Lowell
Saba, Edward	Lowell
Shea, Cornelius J.	Dorchester

Michigan

Drier, William C.	Three Oaks
Foltz, Eldon L.	E. Lansing
Hoyt, Howard P.	Battle Creek
Ross, Arno	Detroit
Rush, Anthony P.	Wayne
Schonwald, John W.	Ann Arbor
Slavin, Francis J.	Howell
Weller, Keith E.	Rockford
Whalen, John M.	Grand Rapids

Montana

Hanley, John C.	Lewistown
Murphy, John J.	Butte

New Jersey

Buermann, August III	Plainfield
Ehrenberg, Bernard	Elizabeth
Feldman, Benjamin J.	Newark
Flanagan, James M.	Norwich
Florio, Joseph	Jersey City
Friedland, Walter	Hackensack
Hogan, James J.	Mt. Holly
Muldoon, Edward J.	Burlington
Prout, Fred J.	Hackensack
Robbins, Edward D.	Bayonne
Wright, Ralph C.	Metuchin

New York

Castronuovo, John J.	Brooklyn
Corwin, Henry R.	Brooklyn
Ehresman, Henry J. Jr.	Utica
Eppers, Edward H.	Buffalo
Green, Sidney L.	Brooklyn
Guthiel, George N.	Syracuse
Haggstrom, Gustave A.	New York
Halpern, Daniel	New York
Hamilton, Francis J.	New York
Hanavan, Eugene J. Jr.	Buffalo
Krafchuk, John	Brooklyn
Lawrence, Richard G.	Long Island City
Legant, Omar	New York
Levine, Harry S.	Brooklyn
Liesenbein, William H.	Bellerose
McDowell, Thomas A.	Rochester
McLean, Donald A.	Forrest Hills
McSwain, Horace B.	New York
Moorman, Silas M. II	New York
Nelson, Donald R.	Jamestown
Papandrea, Dominick A.	Milton
Paver, Robert L.	Belleville
Putney, Bernard S.	Geneva
Rockwell, Paul A.	Oneida
Seidman, Theodore R.	New York
Shapiro, Herman S.	Brooklyn
Sher, Joseph J.	Brooklyn
Shomstein, Morton W.	Brooklyn
Silverthorne, Mervin C.	Scarsdale
Spiro, David	New York
Winnacott, Charles H.	Brooklyn
Winter, Fred S.	Schenectady
Wise, Raymond T.	New York

North Dakota

Depuy, James L.	Jamestown
Elofson, Carl E.	N. Fargo

Ohio

Burry, Robert O.	Cleveland
Clapp, Hubert D.	Columbiana
Cofield, Robert H.	Cincinnati
Cowgill, Herbert F.	Crestline

Ohio—Continued

Farrell, Albert J. Jr.	Cincinnati
Hilsinger, Raymond L.	Cincinnati
Hollister, Leo E.	Cincinnati
Jenike, Thomas S.	Cincinnati
Kay, Sidney A.	Columbus
McFarland, Harry T.	Cincinnati
Miller, Durard E.	Monroeville
Sage, Harry M. Jr.	Columbus
Schuster, George F.	Toledo
Speelman, Merrill E.	Columbus
Wenner, Donald R.	Upper Sandusky

Oklahoma

Bell, Benjamin P.	Norman
Booth, George R.	Wilburton
Capehart, Maurice P.	Oklahoma City
Conn, Julian H.	Atoka
Gallagher, C. A.	Oklahoma City
Huff, Frank M.	Oklahoma City
Jones, William E. Jr.	Seminole
McGee, Harry D.	Pauls Valley
Northrip, Ray U.	Shawnee
Sundgren, Vincel	Tulsa
Thompson, W. Van V.	Oklahoma City

Pennsylvania

Bruton, Charles W.	Downington
Carpenter, James W. J.	Scranton
Caughey, Edward W.	McKeesport
Clapp, George E.	Washington
Diehl, Gilbert H.	Greenville
Donaldson, Joseph V. S.	Pittsburgh
Fryer, Harry J. Jr.	Yeadon
Gabos, Charles W.	Mt. Pleasant
Hayes, George C.	Ambridge
McClure, Richard F.	Pittsburgh
McDonald, John J.	Nesquehoning
McKinney, William L. Jr.	Reading
McPeak, Charles J.	New Castle
Moyer, Warren F.	Pine Grove
Munch, Otto L.	Kennett Square
Murray, Thomas V.	Philadelphia
Pass, James H.	Philadelphia
Powell, Melvin J.	Pittsburgh
Robinson, Samuel W.	Paoli
Schluederberg, Harry	Philadelphia
Silverman, Jerry D.	Pittsburgh
Tighe, Patrick L. Jr.	Scranton
Volk, Herbert	Philadelphia
Weiss, Francis H.	Philadelphia

Rhode Island

Carroll, Robert E.	Providence
McKenna, John J.	Providence
Nardone, Girard F.	Westerly

South Carolina

Hart, Walter M.	York
Herbert, Kenneth H.	Mt. Pleasant
Kredel, Richard A.	Charleston
Luther, Charles G. Jr.	Beaufort
Pickett, Otis M.	Moultrieville
Smith, Hugh P. Jr.	Greenville
Staton, Younger A.	N. Charleston

Tennessee

Braun, Winston	Memphis
Clower, James W.	Dayton
Gragg, Wilfred H. Jr.	Memphis
Lyons, William H.	Rogersville
Miller, Thomas R.	Memphis
Moore, Vernon B.	Brownsville
Roth, William F. Jr.	Franklin
Van Hook, Stonewall J.	Whitehaven

Puerto Rico

Alsina, Manuel F. Jr.	Ponce
Molina-Rivera, Antonio E.	San Juan
Rodriquez, Remy	Guayanilla
Trilla, Emilio F.	Carolina

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, *new hospitals, education and public health.*)

CALIFORNIA

Grant for Cancer Research.—The University of California Medical School, Berkeley-San Francisco, will receive a bequest valued at $59,206 to carry on research for a cure of cancer made possible by a grant from the estate of the late Albert C. Hooper, Palo Alto philanthropist.

New Hospital for Orange County.—The site for a new hospital to be built by the Presbyterian Hospital Association of Orange County has been secured near Costa Mesa, overlooking Newport Harbor. The hospital will serve patients of the coast area and half of Orange County, thus relieving the overburdened hospital facilities. The half million dollar goal set up by the board of directors has already been subscribed.

Clinic for Poliomyelitis Patients.—Los Angeles County Hospital early this summer will open a complete clinic for the treatment of poliomyelitis patients. Heading the clinic is Dr. O. Leonard Huddleston, director, department of physical medicine of the University of Southern California Medical School, Los Angeles, who directed poliomyelitis treatments at the U. S. Army Fitzsimons General Hospital, Denver, during the war. Los Angeles County furnishes the space, maintenance and most of the personnel, while the research laboratory will come from the university and the foundation, according to Leroy R. Bruce, director of the hospital.

California Society of Internal Medicine.—The California Society of Internal Medicine, organized in San Francisco last July, now has 350 members. A member must be a doctor of medicine licensed to practice in California and either a specialist certified by the American Board of Internal Medicine or a practitioner in internal medicine exclusively for a period of at least five years, and he must have the approval of the council. The affairs of the society are administered by a council of nine active members with Drs. William L. Bender, San Francisco, president and DeWitt K. Burnham secretary-treasurer. The address of the society is 2180 Washington Street, San Francisco 9.

CONNECTICUT

Survey of Rural Health.—The State Medical Society's rural health committee, Dr. Norman H. Gardner, East Hampton, chairman, is conducting a statewide survey aimed toward improving health facilities and service in smaller towns and villages. Other members of the committee include Drs. Gert S. Gudernatsch, Sharon; David H. Bates, Putnam, and William H. Upson, Suffield.

Rh Blood Typing.—The Public Health Committee of the Connecticut State Medical Society recently reaffirmed its stand favoring laboratory analyses by the state department of health for discovery of cases in which the Rh factor is lacking in antepartum blood specimens. The original proposal was made by the committee in 1944. In a lengthy survey of the need for such typing service, Friend Lee Mickle, Sc.D., head of the Bureau of Laboratories of the state department of health, has declared that "the insistent demands for Rh typing service cannot be much longer ignored; they must be met by the state department of health, or some other solution satisfactory to the practitioners must be speedily forthcoming from the medical profession." Annual cost of the service is estimated at $12,000.

School of Alcohol Studies. — The Summer School of Alcohol Studies, conducted by the Laboratory of Applied Physiology of Yale University, will hold its fifth annual session July 6-31. The curriculum deals with the medical and various other aspects of alcohol problems. The school is under the directorship of Professor Elvin M. Jellinek, Sc.D. The list of lecturers is made up of authorities who have carried out original research in their respective fields, and, though mainly from the faculties of Yale University, includes representatives of other national institutions. Applications for admission and scholarships to the 1947 course will be received up to April 15, 1947. A prospectus may be obtained by writing to the Executive Secretary, Summer School of Alcohol Studies, Yale University, New Haven, Conn.

DISTRICT OF COLUMBIA

Dr. Geschickter Appointed Professor of Pathology.—Dr. Charles F. Geschickter, Baltimore, has been named professor of pathology and parasitology and director of the department of Georgetown University School of Medicine, Washington. Dr. Geschickter, a graduate of Johns Hopkins University School of Medicine, Baltimore, was director of the Cancer Research Laboratory at Johns Hopkins University School of Medicine, Baltimore, from 1929 to 1940 and is the author of "Tumors of the Bone," published in 1932.

ILLINOIS

Personal.—Dr. J. P. Schreiter, Savanna, was recently honored at a dinner given by the Savanna City Hospital staff. A graduate of Rush Medical College, Chicago, Dr. Schreiter has served forty-six successive years as Carroll County coroner and also company physician and surgeon for the Milwaukee and Burlington railroads.

Cancer Diagnostic Clinic.—A cancer diagnostic clinic was established at Marshall Browning Hospital, DeQuoin, in December with Drs. Hollis N. Allen, St. Louis, and Charles E. Bell, East St. Louis, in charge. The clinic is intended to serve all of southern Illinois and is in session at 7 p. m. on the first and third Wednesdays of each month. The state department of health furnished the x-ray and laboratory equipment. Plans for the county service were announced by the state department more than five years ago, but the war delayed its establishment.

Society at Prewar Strength. — The Winnebago County Medical Society announced at its last annual meeting that it had returned to prewar strength with a membership of 174, or 1 doctor for every 770 persons, almost double the low point reached during the war, when there were about 100 civilian practitioners, or 1 doctor for every 1,340 residents. Dr. Joseph C. Rheingold, Rockford, presented a paper, "Use of Sodium-Pentothal as a Truth Serum," and Dr. Charles B. McIntosh, Iowa City, discussed "Treatment of Hyperthyroidism in Children." Officers elected at the meeting are Drs. Charles L. Leonard, president; Alexander Braze, vice president, and William H. Palmer, secretary-treasurer, all of Rockford.

Herrick House for Convalescent Children.—Total reconditioning is the theme of the new program of Herrick House at Bartlett, Ill., a convalescent home for children with hearts crippled by rheumatic fever. Doctors, nurses, social workers, teachers, psychiatrists and counselors assist in working out the problems of these children. Named in honor of Dr. James B. Herrick of Chicago, this convalescent home, conducted by the Sunset Camp Service League, is open the year round. In winter 40 convalescent boys and girls from 8 to 14 years of age, and in late spring 15 additional children, can be accommodated. The main building has school rooms, library, laboratory, x-ray room, doctor's offices, resident's room, dining room and shop. One wing houses the infirmary and nurses' quarters, another the boys in two dormitories with large living room and counselors' rooms; a third wing, with two dormitories and play space, houses the girls. The attending physician, Dr. Richard L. Marks, Park Ridge, is a member of the staff of Children's Memorial Hospital, Chicago. Herrick House takes in children with rheumatic fever as soon as the acute phase is past. The objective is to rehabilitate and return them to normal living as much as possible. The Sunset Camp Service League also conducts the Max Straus Summer Camp at Bartlett. The Chicago office at 343 South Dearborn Street is in charge of Mrs. Edwin Eells. Mrs. Sidney L. Schwarz, Highland Park, Ill., is president of the league. The honorary chairman of the Medical Advisory Committee of 13 members is Dr. Herrick. The board of directors has 26 members.

Chicago

Institute of Medicine. — The March programs for the fellows of the Institute of Medicine in the current series "Where We Stand Today in Medicine" are March 14, "Nerve Regeneration," by Paul A. Weiss, Ph.D., professor of zoology, University of Chicago School of Medicine; March 28, "Ulcerative Colitis," Dr. Walter L. Palmer, professor of medicine, University of Chicago School of Medicine.

Symposium on Medicolegal Problems.—The fifth and final meeting of the symposium on medicolegal problems of the Institute of Medicine of Chicago will be held March 4 at 7:30 at the Chicago Bar Association. The medical and legal aspects of radiation hazards and health protection in radioactive research will be presented by Dr. Austin M. Brues, associate professor of medicine, University of Chicago School of Medicine, and Augustine J. Bowe, Esq., Chicago Bar Association, with Royal W. Irwin, Chicago Bar Association, presiding.

Capps Prize Awarded to Dr. Block.—The Institute of Medicine of Chicago announces that the $400 1946 Joseph A. Capps Prize for Medical Research has been awarded to Dr. Matthew Block, Brooklyn, for his work on "Sequelae of Trench Foot: Anatomic Study." The Joseph A. Capps prize is awarded for the most meritorious investigation in medicine or in the specialties of medicine or in the fundamental sciences, provided the work has a definite bearing on some medical problem. Dr. Block received his M.D. degree in 1943 from the University of Chicago Department of Medicine.

Nineteen Northwestern Faculty Members Retire.—At a dinner and reception given by the Northwestern University Alumni Association February 13, 19 members of the Medical School faculty of Northwestern University were honored on the occasion of their retirement. They will henceforth hold emeritus rank: Drs. Archibald Church, now of Pasadena, Calif., Hans C. S. Aron, James G. Carr, William C. Danforth, Evanston, Alexander A. Goldsmith, Mark T. Goldstine, Christian D. Hauch, Willard G. Jeffries, Anna R. Lapham, Hugh McKenna, Malcolm T. MacEachern, Julius F. Meyer, Harry E. Mock, Otto Porges, Harry M. Richter, Louis E. Schmidt, James P. Simonds, John G. Wilson and John A. Wolfer. The twentieth special guest was Dr. Andrew C. Ivy, who resigned from the Northwestern faculty of medicine last fall to become vice president in charge of professional schools of the University of Illinois.

Tuberculosis Control Program.—The Tuberculosis Control Committee in its report to the Council of the Chicago Medical Society on January 14 pointed out that the tuberculosis rate for Illinois is 45 plus per hundred thousand and for Chicago it is 58 plus, while in neighboring Iowa it is 15 plus. During the last decade the mortality rate for the county has fallen 35 per cent, in Chicago 10 per cent. Among Chicago's nonwhite men past 60 the rate is 435 plus per hundred thousand. To control tuberculosis Illinois spends 42 cents for each tuberculosis death as compared to the average of $309 of various other states. In addition, Illinois and Nevada are the only states that do not have state owned and operated sanatoriums. The proposed program for control of tuberculosis includes recommendations for the construction of four 250 bed sanatoriums, conversion of the Municipal Contagious Hospital for the care of tuberculosis, a tax supported tuberculosis control program for Cook County outside Chicago, construction of three 150 bed sanatoriums on the north, west and south sides of Chicago and encouraging private sanatoriums to increase their beds to provide for tuberculous patients. The construction program would require about $45,000,000, according to Dr. James H. Hutton, co-chairman of the tuberculosis control committee. New legislation is being sought to carry out the program. The aid of 125 organizations has been enlisted for a program of public education. Members of the tuberculosis control committee are Drs. Hutton, Jerome Head, Edward A. Piszczek, Arthur W. Newitt and Oscar Hawkinson and Arthur H. Parmelee of Oak Park, Frederick W. Slobe, Henry C. Sweany and Clarence L. Wheaton.

MASSACHUSETTS

Sharp Increase in Diphtheria and Measles.—The annual report of the state department of public health showed what it characterized as a "most alarming experience" in the sharp rise in diphtheria, which more than doubled its incidence for any year since 1937 with a total of 443 reported cases as against 194 for 1945. Boston, Somerville, Lowell, Lynn, New Bedford, Taunton, Worcester and Gloucester were listed as having high prevalence. Measles broke all records during 1946. Ordinary measles cases jumped from 7,486 in 1945 to 38,402 in 1946, while the German variety jumped from 1,308 to 4,619.

NEW YORK

Dr. Birkhaug to Set Up BCG Program.—The tuberculosis control program of the state health department calls for the manufacture and use of the BCG vaccine, Dr. Robert E. Plunkett, Albany, assistant health commissioner, has announced. Dr. Konrad Birkhaug, Albany, formerly of Norway, has been engaged to set up the program for the development of the vaccine and is now working under the direction of Dr. Gilbert Dalldorf in the division of laboratories and research, Albany. Plans for the distribution of vaccine are being developed jointly by the medical education and public health committee of the Medical Society of the State of New York and the state health department, Dr. Plunkett said. A limited number of physicians are to be trained in its use. This is part of the state's $20,000,000 twenty year plan to eradicate tuberculosis, proclaimed by the governor last year.

New York City

Child Development Center.—A clinic for the treatment of children with emotional disturbances opened February 3 at 227 East 59th Street, to be known as the Council Child Development Center. It is supported jointly by the New York section, National Council of Jewish Women, the Lieut. Lester N. Hofheimer Estate and the Jewish Board of Guardians. Employing the service of pediatricians, psychiatrists, nursery teachers and other specialists, it seeks to discover the causes of behavior problems in apparently normal children.

Study of Eye Diseases.—Four scholarships of $500 each for advanced study of eye diseases at the New York University College of Medicine have been awarded to Drs. Edward Danforth, Bainbridge; Charles P. Goldsmith, Catasauqua, Pa.; Jonathan L. Hanis, Elberon, N. J., and Hugh E. McGhee, Jeffersonville, all postgraduate students in the department of ophthalmology. The Eye Conservation Fund, Inc., of the New York Lions Club, Ernest R. Fryxell, chairman, initiated the scholarships last spring with a gift of $2,000 to the college.

Increase in Venereal Disease.—New York City and state had a sharp increase in venereal disease in 1946, according to Dr. Israel Weinstein, health commissioner. A study of reported cases, with particular emphasis on the ages of the infected persons, indicates a disproportionate increase in the teen age groups. Upstate New York in 1946 reported double the number of 1945 cases of early infectious syphilis and approximately three times as many as the prewar monthly average. In New York City there has been a steadily increasing number of infections since 1941.

Psychiatric Pavilion Opened.—The new seven story psychiatric pavilion of Kings County Hospital in Brooklyn opened February 6, when 112 male patients were transferred from the old psychiatric pavilion. The new pavilion has a capacity of 400 beds with four wards on each floor from the second to the sixth which are arranged as either private or semiprivate rooms, eliminating the use of large wards. The seventh floor contains equipment for occupational therapy, classrooms and space for exercising patients. Dr. Sam Parker, director of the psychiatric division at the hospital and also director of psychiatry of the New York City Department of Health, said the new pavilion will offer "a planned degree of individualized treatment of patients which does not exist in any other public hospital." It will also relieve the heavy load on the psychiatric service in Bellevue Hospital. Women and children from Queens and Brooklyn will also be admitted.

OHIO

Society News.—At a recent meeting of the Cincinnati Academy of Medicine Dr. Edgar V. Allen, Mayo Clinic, Rochester, Minn., spoke on "The Present Status of Anticoagulant Therapy."

Personal.—Dr. Harold C. Wise, Cleveland, has been appointed chief of staff at St. Anne's Maternity Hospital, succeeding Dr. Joseph R. Thompson, who died suddenly last December 22. Dr. Wise is a graduate of Creighton University School of Medicine, Omaha, and has been house physician at St. Anne's.——Enrique E. Ecker, Ph.D., professor of immunology, Western Reserve University, has been elected Councilor of Honor in the National Council of Scientific Investigations of Spain. Dr. Ecker recently returned from a trip to Europe, where he delivered a series of lectures.

OREGON

Postgraduate Course in Ophthalmology and Otolaryngology.—Lectures, clinical demonstrations and ward rounds have been planned for the eighth annual spring Postgraduate Course in Ophthalmology and Otolaryngology to be held in Portland, April 7-12. The program has been arranged by the Oregon Academy of Ophthalmology and Otolaryngology and the University of Oregon Medical School, Portland. Drs. John H. Dunnington, professor of ophthalmology at Columbia University College of Physicians and Surgeons, New York, and George E. Shambaugh Jr., assistant professor of otolaryngology, Northwestern University Medical School, Chicago, are among the guest speakers.

TENNESSEE

Unveil Plaque at Jackson.—A bronze plaque to the late Dr. James W. McClaran recently was unveiled at Memorial Hospital, Jackson. Dr. McClaran, a native of Jackson and a graduate of the Vanderbilt University School of Medicine, Nashville, who distinguished himself as a surgeon attached to the French army and later to the U. S. Army in World War I, was a member of the Memorial Hospital staff for years until his death in December 1945.

TEXAS

Pathologists Meet.—The Texas Society of Pathologists had its annual meeting January 26 at Houston. The morning was devoted to a business session, and in the afternoon a seminar on microscopic pathology was held at the Baylor University College of Medicine with Dr. Stuart A. Wallace, Houston, in charge. Newly elected officers for 1947 are Drs. David A. Todd, San Antonio, president; William W. Coulter, Houston, president-elect; John F. Pilcher, Corpus Christi, vice president, and Charles T. Ashworth, Dallas, secretary-treasurer. The next meeting will be held Jan. 25, 1948 at Galveston.

Pediatric Conference.—The spring pediatric conference of the Postgraduate Division of the University of Texas School of Medicine, Galveston, has been announced for March 31 through April 5. It is a cooperative undertaking by the University of Texas Child Health Program and the Division of Maternal and Child Health of the Texas State Board of Health. A limit of sixty physicians will be accepted. Registrants on state or federal payrolls will receive expenses in accordance with state regulations. Guest speakers for the session include Drs. John M. Adams, associate professor of pediatrics, University of Minnesota Medical School, Minneapolis; Harry H. Boyle, associate of pediatrics, Northwestern University Medical School, and associate attending pediatrician, Children's Memorial Hospital, Chicago; Hugh McCulloch, associate professor, clinical pediatrics, Washington University School of Medicine, St. Louis; William A. Reilly, assistant clinical professor of pediatrics, University of California Medical School, Berkeley-San Francisco, and Philip M. Stimson, director of polio division, Knickerbocker Hospital, associate clinical professor of pediatrics, Cornell University School of Medicine, New York.

VERMONT

Medical Public Relations Plan.—The council of the Vermont State Medical Society has directed the executive secretary to prepare a coordinated public relations plan with a detailed outline for the integration of various technics. Intended for use primarily by the council, the plan will be available to all members.

VIRGINIA

Personal.—Dr. Thomas M. Peery, director of laboratories, Alexandria Hospital, Alexandria, Va., resigned in January to assume the post of director of laboratories at George Washington University, Washington, D. C.

New Health Services.—Effective February 1, Charles City County and New Kent County were added to the Peninsula Health District with offices in Charles City and Providence Forge, respectively. Dr. Thomas F. McGough Jr. is health officer for the district, with headquarters in Hilton Village. The Amelia-Goochland-Powhatan Health District has been established with headquarters at Powhatan, with Dr. Henry M. Snead as health officer.

PUERTO RICO

Nonimmigrant Entry Authorized for Doctors.—The Bureau of Immigration and Naturalization in Washington has authorized the entry into Puerto Rico as nonimmigrants of doctors who are not citizens of the United States to help alleviate the critical shortage of physicians on this island. The decision applies only to medical personnel who will fill vacancies in the Puerto Rican department of health for which qualified Puerto Rican personnel is not available.

Annual Meeting of Medical Association.—Physicians from Puerto Rico, continental United States and other American republics met in San Juan in December for a series of discussions and clinics marking the forty-third annual convention of the Medical Association of Puerto Rico. The guests of honor included Drs. William S. Middleton, dean, University of Wisconsin Medical School, Madison; James H. Means, professor of clinical medicine, Harvard Medical School, Boston; Leland E. Hinsie, professor of psychiatry, Columbia University College of Physicians and Surgeons, New York; Lyndon E. Lee Jr., University of Michigan Medical School; William A. Sodeman, professor of preventive medicine, Tulane University of Louisiana School of Medicine, New Orleans; Justus B. Rice, director of medical research, Winthrop Laboratories, New York City; Frederick F. Yonkman, director of research, the Ciba Laboratories, Madison, N. J.; Rodolfor Perez de los Reyes, Cuban cardiologist; Dr. Augustus Castellanos, professor of pediatrics, University of Havana, and Isaac Costero, pathologist, National Institute of Cardiology, Mexico City.

GENERAL

American College of Surgeons Sectional Meetings.—The American College of Surgeons will begin its 1947 series of two day sectional meetings in Baltimore with headquarters at the Lord Baltimore Hotel, March 10 and 11. The meetings are for the medical profession at large and for hospital personnel.

Visiting Scientist Returns to Moscow.—Professor Vassily V. Parin, secretary general of the Academy of Medical Scientists of the Union of Soviet Socialist Republics, returned to Moscow January 17 after a three month tour of the United States. He studied American medical education, medical research and public health procedures. Cancer comprised one of his chief studies here, he said.

Industrial Medicine Fellowship.—A fellowship in industrial medicine has been established at the University of Pittsburgh School of Medicine by Schenley Distillers Corporation. The fellowship carries a residency of eighteen months at the school of medicine. Further particulars may be had by writing to the Director, Department of Industrial Hygiene, University of Pittsburgh School of Medicine, Pittsburgh 13.

American Urological Association.—The annual meeting of the Mid-Atlantic Section of the American Urological Association will be held in Washington, D. C., March 20-22 at the Statler Hotel. Principal speakers will be Drs. Charles McMartin, Omaha, president, American Urological Association; E. Granville G. Crabtree, Boston, president-elect, and Ralph M. LeComte, Washington, president, Mid-Atlantic Section of the association.

Red Cross Drive.—This month the American Red Cross will appeal to the public for $60,000,000, a much lower goal than that of recent years. The Red Cross must maintain a staff for the armed forces wherever stationed and in the home towns of their families. Its 3,754 chapters cover every square mile of the nation. Estimated cost of carrying on the particular program as liaison between servicemen and their families is $6,018,000; for recreation for servicemen overseas, $11,987,000; for hospitals, domestic, $3,207,000; overseas, $2,037,000; veterans' hospitals, $1,893,000; for assistance to veterans and their families $2,249,000; home service, $25,561,000; disaster relief, $2,700,000; general executive administration, $1,558,000, and rebuilding overseas Red Cross organizations, $2,294,000. Fund chairman of the 1947-1948 drive for his second year is Harvey D. Gibson, an American Red Cross commissioner to Europe in both world wars.

UNRRA Health Division Closes.—The UNRRA Health Division will wind up its activities March 31 after more than three years of work. During this time UNRRA has made available to the health departments of thirteen liberated countries the advice and assistance of its international health staff and has given medical and sanitation services to over a million persons in camps for displaced persons in the Middle East, Germany, Austria and Italy. It recruited from thirty-five countries a staff totaling nearly 1,200 doctors, nurses, sanitary engineers, epidemiologists, nutritionists and experts in medical supplies and hospital equipment. Dr. Wilbur A. Sawyer, New York City, has served as director of UNRRA's Health Division. Several phases of the Health Division have been transferred to the Interim Commission of the World Health Organization. UNRRA has authorized the transfer of one and one-half million dollars to the commission pending the full establishment of the World Health Organization.

Annual Report of Commonwealth Fund.—The fellowships sponsored for many years by the Commonwealth Fund and suspended in 1941 were recently reestablished, and twenty British students have arrived in the United States to study under the scholarships at various universities. From 1925 to 1941, as guests of the fund for advanced study, 411 fellows visited this country. The fund continued its support of health activities and in the year ended Sept. 30, 1946 appropriated $581,567 to the Division of Rural Hospitals, $278,194 to the Division of Public Health, $294,040 to the Division of Mental Health, $224,850 for Medical Education, and $447,391 for Medical Research. The 28th annual report states that nothing during the year was more rewarding than the fund's collaboration with several young psychiatrists in the pilot course in psychotherapy for general physicians offered at the University of Minnesota last April. This course spearheaded the fund's mental hygiene program and also an attempt on a small scale to get the most pertinent parts of basic psychiatric thinking into general medicine.

Society News.—The Chapter Magnum of the International and Spanish Speaking Association of Physicians celebrated the twentieth annual meeting at the Waldorf-Astoria Hotel, New York City, on January 27 with a symposium on "The Contemporary Attitude Toward Cancer."——The seventy-fourth meeting of the National Conference of Social Work will be held in San Francisco, April 3-19, the Civic Auditorium serving as headquarters for the conference.——The Society of University Surgeons met February 13-15 as guests of the Massachusetts General, Peter Bent Brigham and Children's hospitals, Boston. The following officers were elected: Drs. Cobb Pilcher, Nashville, Tenn., president; Robert M. Zollinger, Boston, president-elect; Samuel W. Moore, New York City, secretary, and Jean M. Stevenson, Cincinnati, treasurer.——At the regular meeting of the New England Society of Physical Medicine in Boston February 19 Wayne McFarland, Washington, D. C., consultant in physical medicine, Washington Sanatorium and Hospital, discussed "Exercises for the Medical and Surgical Bed Patient." A new film demonstrating the exercises was shown.

National Health Council Expands Program.—Bailey B. Burritt has been appointed executive director of the National Health Council. Mr. Burritt will launch a program made possible through an appropriation of $78,500 by the Rockefeller Foundation, of more active leadership among the twenty national voluntary health agencies represented on the council. The National Health Council, which began to function in 1921, comprises representatives from such major organizations as the National Tuberculosis Association, the American Cancer Society, the American Heart Association, the American Public Health Association, the American Red Cross, the National Organization for Public Health Nursing and the National Safety Council. From headquarters at 1790 Broadway, New York City, a number of services available to all health agencies are maintained. The National Health Council also cooperates with state and local groups in their efforts to improve health services. One aim of the expanded program is to make a qualified field service available to states and cities where the problem of coordination among voluntary health agencies is urgent. It is also planned to expand health education services available to member agencies of the council.

General Cumming Retires as Director of Pan American Sanitary Bureau.—At the twelfth Pan American Sanitary Conference in Caracas, Venezuela, January 12-24, Gen. Hugh S. Cumming (retired), Washington, D. C., U. S. Public Health Service, was elected director emeritus of the Pan American Sanitary Bureau after twenty-six years of active service as director without remuneration. General Cumming retired as director of the bureau on January 21 and Dr. Fred L. Soper of the Rockefeller Foundation, New York, assumed the office. General Cumming was surgeon general of the U. S. Public Health Service from Jan. 27, 1920 until he retired in 1936. He was also vice president of the health section of the League of Nations, representative of the United States at the Cannes Conference and president of the Office International d'Hygiène Publique. He also served as president of the Allied Medical Mission to Poland. Dr. Soper, who has been a member of the staff of the International Health Board (now the International Health Division) of the Rockefeller Foundation since 1920, was made regional director in 1927 and associate director in 1945. In 1942 he was made consultant to the Secretary of War and served with the Allied Military Government. He has been awarded the Typhus Commission Medal.

International Society of Surgeons.—The twelfth congress of the International Society of Surgeons will be held in London, September 14-20, with Dr. Leopold Mayer, Brussels, for nearly thirty years secretary general, as president. The following subjects will be discussed: (1) "Operative Treatment of Fractures," by Professor R. Danis, Brussels; (2) "The Role of Penicillin in Surgical Practice,"Sir Alexander Fleming, London; (3) "Advances in Arteriography and Venography," Professor Reinaldo dos Santos, Lisbon; (4) "Advances in Vascular Surgery," Professor René Leriche, Paris; (5) "Surgical Treatment of Pulmonary Stenosis," Dr. Alfred Blalock, Baltimore; (6) "Role of Vasodilatation in Arterial Diseases," Dr. Julius Diez, Buenos Aires; (7) "Results of Heparin in Surgery," Dr. Clarence M. L. Crafoord, Stockholm; (8) "Skin Defects: Their Repair by Flaps and Free Skin Grafts," Professor T. Pomfret Kilner, Oxford; (9) "Results of Early Operation in War Wounds of the Lungs," Dr. Manuel Bastos-Ansart, Barcelona, and (10) "Recent Progress in the Treatment of Burns," by a Russian surgeon. Detailed summaries of the papers carefully translated into all the official languages of the conference will be circulated for discussion to follow delivery of the papers. This is the first postwar congress of the society, and those attending are asked to make early reservations with Dr. L. Dejardin, General Secretary, 141 rue Belliard, Brussels.

Shortage of Trained Medical Record Librarians.—With a grant of $22,000 from the National Foundation of Infantile Paralysis, the Educational Board of the American Association of Medical Record Librarians has designed an extension course on a nationwide basis to give inservice instruction in the field in order to meet the shortage of trained medical record librarians. Any one employed in hospital or clinical records and administrators interested in a better understanding of the record department are eligible to attend. Those previously so employed who desire to take a refresher course will be accepted. The class meets for five consecutive days to study terminology, medical ethics, related subjects, and how to use the standard nomenclature of disease and of operations. Twelve courses have been held in areas along the Eastern Coast, and further meetings are scheduled for San Francisco, March 3-7; Portland, Ore., March 10-14; Seattle, March 17-21; Omaha, March 24-28; Birmingham, Ala., April 14-18; Indianapolis, April 28-May 2; Detroit, May 12-16; Cleveland, May 19-23; Minneapolis, May 26-30, and Boston, June 9-13. More than 400 persons have been trained in inservice courses to date. The field instructor is Miss Margaret C. Taylor, Director, School for Medical Record Librarians, Rochester General Hospital, Rochester, N. Y. The National Foundation of Infantile Paralysis also has given $61,000 for scholarships to train new personnel for medical record librarians.

LATIN AMERICA

Inter-American Congress of Cardiology.—The second Inter-American Congress of Cardiology convened in Mexico City on Oct. 6, 1946 under the direction of its president, Professor Ignacio Chavez, director of the National Institute of Cardiology of Mexico. The sponsoring societies and institutions were the Sociedad Interamericana de Cardiologia, the American Heart Association, Sociedad Argentina de Cardiologia, Sociedade Bradileira de Cardiologia, Sociedad Cubana de Cardiologia, Instituto Nacional de Cardiologia de Mexico, Secretaria de Salubridad y Asistancia Publica de Mexico, Secretaria de Relaciones Exteriores de Mexico and Universidad Nacional Autonoma de Mexico. At the business meeting a permanent Inter-American Society of Cardiology was formed and a constitution adopted. Dr. Ignacio Chavez was elected honorary president for life and the National Institute of Cardiology of Mexico designated the permanent secretariat. This society is to be under a council of directors, of which five represent South and Central America and five North America. The directors from the South are Drs. Ramon Aixala Alvarez, Cuba; Herman Alessandri, Chile; Eduardo Braun Menéndez, Argentina; Teofilo Ortiz Ramirez, Mexico, and Jairo Ramos, Brazil. Those from the North are Drs. Arlie R. Barnes, Rochester, Minn.; George R. Herrmann, Galveston, Texas; William J. Kerr, San Francisco; Howard B. Sprague, Boston, and John Hepburn, Toronto, Ont. The society plans to meet every two years, the next time in 1948 in the United States. At the time of organization of the society an international council was appointed to arrange an international congress every six years.

Marriages

George Wingate Waring Jr., Boston, to Miss Louise Sawyer of Cambridge, Mass., in Gorham, Maine, December 7.

Schubert Bryan Simmons, Bay Springs, Miss., to Miss Mary Hall of Oakland in Memphis, Tenn., October 1.

Frederick Victor Vance Jr., Bristol, Tenn., to Miss Ann Lyttleton Waddell at Charlottesville, Va., October 5.

Clayton L. Rice, Logansport, Ind., to Miss Jane Austermiller of Indianapolis in Louisville, Ky., June 21.

Philip Gordon Robson, Campbell, Calif., to Miss Margaret Delphine Casey of Oshkosh, Wis., in September.

Kenneth Brenner Wright, Rocky Mount, N. C., to Miss Dorothy Ellis of Monticello, Ga., in October.

Forrest Veil Schumacher, Philadelphia, to Miss Marjorie Lillian Brown of Bryn Mawr, Pa., June 22.

Robert Lyman Paver, Belleville, N. Y., to Miss Kathleen Connelly of Darlington, Wis., September 28.

Michael Andrew Salomone, New York, to Miss Ann Louise Pizzuto of Verona, N. J., June 17.

James Walter Polk, Troy, Tenn., to Miss Hazel Killingsworth of Fort Gaines, Ga., October 6.

Mason Romaine to Mrs. Robert Randolph Parker, both of Petersburg, Va., September 7.

Deaths

Justin Allis Garvin ⊕ Cleveland; born in Valparaiso, Chile, South America, June 7, 1886; Western Reserve University School of Medicine, Cleveland, 1914; specialist certified by the American Board of Pediatrics; member of the American Academy of Pediatrics; member, formerly secretary and chairman of the pediatric section of the Academy of Medicine of Cleveland, serving as its secretary from 1935 to 1937; served as secretary of the Cleveland Medical Library; served during World War I; formerly associate editor of the *Bulletin of the Academy of Medicine of Cleveland;* head of the medical department of the board of education of Shaker Heights; associate physician at the St. Luke's Hospital, where he died Dec. 7, 1946, aged 60, of coronary thrombosis.

Will Melville Garton ⊕ Medical Director, Rear Admiral, U. S. Navy, retired, Los Angeles; born in Des Moines, Oct. 31, 1875; State University of Iowa College of Homeopathic Medicine, Iowa City, 1896; fellow of the American College of Surgeons; entered the U. S. Navy in 1898; veteran of the Spanish-American War; served as medical aid in the eleventh naval district in San Diego; formerly inspector of medical department activities on the Atlantic Coast and also on the Pacific Coast; retired Nov. 1, 1939 on attaining the statutory retirement age; died in the Naval Hospital, Long Beach, June 7, 1946, aged 70, of perforated duodenal ulcer.

Charles Hubart Lovewell ⊕ Major, U. S. Army, retired, Spokane, Wash.; born in Coldwater, Mich., Jan. 18, 1872; Northwestern University Medical School, Chicago, 1898; served during World War I; entered the medical corps of the U. S. Army as major in 1920; later served at various stations in the United States and in the Philippines; retired Dec. 31, 1935 for disability in line of duty; formerly associated with the University of Washington in Seattle, where during World War II he served with the health center; died in the Sacred Heart Hospital Oct. 31, 1946, aged 74.

Harry Selby Purnell ⊕ Colonel, U. S. Army, retired, Berlin, Md.; University of Pennsylvania Department of Medicine, Philadelphia, 1900; fellow of the American College of Surgeons; Army Medical School in 1903 and the Medical Field Service School Advanced Course in 1928; entered the U. S. Army in 1902; resigned in 1915 with the rank of captain; reentered the service in 1916; served during World War I; promoted through the various ranks to that of colonel in 1929; retired June 30, 1934 for disability in line of duty; died Dec. 20, 1946, aged 67, carcinoma.

Philip Abrahamson, Philadelphia; Jefferson Medical College of Philadelphia, 1899; served on the staffs of the Mount Sinai and Jefferson Medical College hospitals; died Nov. 9, 1946, aged 69.

Irving Cyrus Allen, Brooklyn; University of the City of New York Medical Department, New York, 1895; member of the American Medical Association; for many years connected with the board of education; died Dec. 3, 1946, aged 74, of coronary thrombosis.

Arthur Anderson, Guthrie, Okla.; University of Louisville (Ky.) School of Medicine, 1911; died in the Masonic Home for Aged Nov. 24, 1946, aged 64, of pneumonia and Parkinson's disease.

Albert Francis Barry, Amityville, N. Y.; University of the City of New York Medical Department, 1888; died Dec. 14, 1946, aged 79.

George W. Beery, Lancaster, Ohio; Eclectic Medical Institute, Cincinnati, 1894; member of the American Medical Association; died Dec. 23, 1946, aged 89, of cerebral hemorrhage.

Sarah Jane Boland-Wegmann, Hastings, Neb.; Kansas City (Mo.) Hahnemann Medical College, 1902; died Dec. 29, 1946, aged 66, of bilateral pyelonephritis.

Charles Hugh Breuer, San Jose, Calif.; John A. Creighton Medical College, Omaha, 1896; member of the American Medical Association; died Dec. 18, 1946, aged 80, of bronchopneumonia and cardiovascular disease.

David Z. Coats, Magee, Miss.; Louisiana State University School of Medicine, New Orleans, 1941; member of the American Medical Association; interned at the Shreveport Charity Hospital in Shreveport, La.; served a residency at the E. A. Conway Memorial Hospital in Monroe, La.; affiliated with the Magee General Hospital; killed Dec. 30, 1946, aged 30, when his pistol was accidentally discharged.

Charles C. Conlee ⊕ Cook, Neb.; Chicago College of Medicine and Surgery, 1915; served on the city board of health, as president of the Johnson County Medical Society and the board of education and as chairman of the Red Cross; died Dec. 27, 1946, aged 62, of coronary thrombosis.

Perry Wessel Cornue ⊕ Yakima, Wash.; Chicago Homeopathic Medical College, 1894; died Dec. 5, 1946, aged 75, of coronary occlusion.

George Minton Crawford, Arcadia, Calif.; Baltimore Medical College, 1892; died Nov. 7, 1946, aged 84.

Porter James Crawford ⊕ Havana, Cuba; Western Reserve University School of Medicine, Cleveland, 1920; an Associate Fellow of the American Medical Association; at one time health officer of Troy, Ohio, where he had been health officer of Miami County; Caribbean regional director, International Health Division of the Rockefeller Foundation; died Dec. 27, 1946, aged 51, of coronary thrombosis.

Charles Percy Crudup, Nebraska City, Neb.; John A. Creighton Medical College, Omaha, 1898; served as president of the chamber of commerce; died in Wake Forest, N. C., Nov. 25, 1946, aged 74.

Samuel Walton Day, Auburn, N. Y.; Syracuse University College of Medicine, 1905; on the staff of the City Hospital; died Dec. 14, 1946, aged 71, of coronary thrombosis.

Ray Russell Dearborn ⊕ Madera, Calif.; University of Vermont College of Medicine, Burlington, 1911; past president of the Fresno County Medical Society; fellow of the American College of Surgeons; owner of the Dearborn Hospital; died Dec. 29, 1946, aged 58, of coronary occlusion.

James Henry Deyerle ⊕ Harrisonburg, Va.; University College of Medicine, Richmond, 1901; served as health officer and physician at Madison College; on the staff of the Rockingham Memorial Hospital; died Nov. 26, 1946, aged 70, of coronary occlusion.

Arthur Royal Dildine, Cheney, Kan.; University of Kansas School of Medicine, Kansas City, 1906; member of the American Medical Association; also a dentist; died in the Wesley Hospital, Wichita, Dec. 26, 1946, aged 69, of coronary occlusion.

Hiram Clifford Elliott, Worcester, Mass.; Bellevue Hospital Medical College, New York, 1888; member of the American Medical Association and the Medical Society of the State of New York; at one time affiliated with the Kings County Hospital in Brooklyn; died Dec. 18, 1946, aged 89.

Arthur O. Etienne, Berwyn, Md.; Baltimore Medical College, 1896; member of the American Medical Association; served as a draft examiner for Prince Georges County at Upper Marlboro during World War I and as a member of the Maryland Draft Appeal Board during World War II, serving Baltimore and Prince Georges County among other areas; on the staff of Prince George's Hospital in Cheverly; died Dec. 14, 1946, aged 76, of coronary thrombosis.

Thomas R. Finley, Madisonville, Ky.; Missouri Medical College, St. Louis, 1877; died in the Hopkins County Hospital Dec. 26, 1946, aged 96, of a hip fracture received in a fall.

Oscar Edward Fischer, Detroit; Harvard Medical School, Boston, 1898; died Dec. 27, 1946, aged 73, of cerebral hemorrhage.

Adolph J. Foerter ⊕ Peoria, Ill.; Bennett Medical College, Chicago, 1901; on the associate medical staff of the Methodist Hospital, where he served as president of the staff and where he died Dec. 17, 1946, aged 71, of cerebral thrombosis.

George McClellan Freeman, Shoals, Ind.; Kentucky School of Medicine, Louisville, 1890; served as secretary of the Daviess-Martin Counties Medical Society, secretary of the school board and the board of health, county coroner, a member of the first pension board in Martin County and medical examiner for the draft boards during World wars I and II; died in the Daviess County Hospital in Washington, Dec. 20, 1946, aged 79.

Ambrose William Gallagher, Hamlet, N. C.; Fordham University School of Medicine, New York, 1920; member of the American Medical Association and the Medical Society of the State of New York; died Dec. 24, 1946, aged 50, of heart disease.

James Griffin Gallagher, Chicago; Loyola University School of Medicine, Chicago, 1932; member of the American Medical Association; died in the Holy Cross Hospital Dec. 22, 1946, aged 40.

Frank Williams Gardner, Columbus, Ohio; Starling Medical College, Columbus, 1907; died Dec. 1, 1946, aged 71.

Charles George Geiger, St. Joseph, Mo.; Ensworth Medical College, St. Joseph, 1888; Jefferson Medical College, Philadelphia, 1889; member of the American Medical Association; at one time on the faculty of the Ensworth Medical College; died Dec. 10, 1946, aged 81, of coronary thrombosis.

Robert Gewanter ⊕ Long Island City, N. Y.; University and Bellevue Hospital Medical College, New York, 1926; member of the American Academy of Ophthalmology and Otolaryngology; specialist certified by the American Board of Otolaryngology; on the staffs of the Greenpoint Hospital in Brooklyn and the Gouverneur and Bellevue hospitals in New York; died Nov. 10, 1946, aged 44, of heart disease.

Augustus George Gigger, Falmouth, Mass.; Boston University School of Medicine, 1906; member of the American Medical Association; died in Barnstable Nov. 27, 1946, aged 68, of bronchopneumonia.

George Yancey Gillespie Sr., Duck Hill, Miss.; Memphis (Tenn.) Hospital Medical College, 1883; died in Greenwood Dec. 24, 1946, aged 91.

Edwin Blanchard Glass, Los Angeles; Baylor University College of Medicine, Dallas, Texas, 1928; interned at St. Vincent's Hospital; found dead Dec. 6, 1946, aged 42.

Harman Reasoner Goldthwaite ⊕ Marion, Ind.; Temple University School of Medicine, Philadelphia, 1922; past president and secretary of the Grant County Medical Society; served as school physician; on the staff of the Marion General Hospital; died Dec. 8, 1946, aged 53, of coronary thrombosis.

George Augustus Gregory ⊕ Boothbay Harbor, Maine; Medical School of Maine, Portland, 1891; honorary member of the Maine Medical Association; formerly associated with the U. S. Public Health Service; served on the staff of St. Andrews Hospital; died Dec. 1, 1946, aged 81, of chronic nephritis.

Willard Arthur Guyton Jr., East St. Louis, Ill.; University of Illinois College of Medicine, Chicago, 1943; interned at St. Louis City Hospital; diplomate of the National Board of Medical Examiners; began active duty as a first lieutenant in the medical corps, Army of the United States, in January 1944; promoted to captain; released from active duty in August 1946; died in St. Mary's Hospital Dec. 9, 1946, aged 26, of sarcoma.

Bishop Adams Hall, Forest Hills, N. Y.; Kentucky School of Medicine, Louisville, 1890; died Dec. 9, 1946, aged 89.

Ralph William Hall, Dover, N. H.; Long Island College Hospital, Brooklyn, 1911; died in Concord Sept. 7, 1946, aged 63.

Nicholas N. Harin, New York; Beogradskog Universiteta Medecinski Fakultet, Beograd (Belgrade) Yugoslavia, 1930; interned at the Hudson River Hospital in Poughkeepsie, N. Y.; served a residency at the Pilgrim State Hospital in Brentwood, N. Y.; resident physician at the New York City Farm Colony in Staten Island, where he died Nov. 18, 1946, aged 46.

Charles Hickman Harris, New Paris, Ohio; Starling Medical College, Columbus, 1890; Jefferson Medical College of Philadelphia, 1891; member of the American Medical Association; served during World War I; also a druggist; died recently, aged 79.

William John Harris, Valley Park, Mo.; Homeopathic Medical College of Missouri, St. Louis, 1875; served on the staff of the Christian Hospital in St. Louis; died Dec. 25, 1946, aged 94.

James Henry Hartman ⊕ Jacksonville, Fla.; College of Physicians and Surgeons, Baltimore, 1904; member of the Southeastern Surgical Congress and the Southern Medical Association; on the staff of St. Vincent's Hospital; died Dec. 26, 1946, aged 66, of coronary occlusion.

George Richard Hays, Marissa, Ill.; Beaumont Hospital Medical College, St. Louis, 1896; member of the American Medical Association; affiliated with St. Elizabeth's Hospital in Belleville; died Dec. 7, 1946, aged 75, of heart disease.

William Harrison Hemker ⊕ Pacific, Mo.; St. Louis University School of Medicine, 1904; died Oct. 6, 1946, aged 65, of angina pectoris.

Arthur John Herrmann, Los Angeles; Rush Medical College, Chicago, 1888; affiliated with Hospital of the Good Samaritan and the California Lutheran Hospital, where he died Dec. 25, 1946, aged 81, of carcinoma of the colon.

Henry George Hertel, Giddings, Texas; Washington University School of Medicine, St. Louis, 1901; county health officer; past president of the chamber of commerce; died in St. Francis Hospital, Brenham, Dec. 6, 1946, aged 72, of coronary occlusion.

Julian Adolph Hielscher, Mankato, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1891; vice president of the American State Bank of Mankato; served during World War I, as health officer of Mankato, on the library board and school board; died Oct. 9, 1946, aged 82.

Eleanor Jane Hill, Minneapolis; University of Minnesota College of Medicine and Surgery, Minneapolis, 1902; member of the American Medical Association; formerly school physician; on the staffs of the Asbury and Northwestern hospitals; died Dec. 12, 1946, aged 78, of Parkinson's disease and chronic arthritis.

Harold Phillips Hill ⊕ San Francisco; Medical Department of the University of California, San Francisco, 1901; clinical professor of medicine emeritus at the Stanford University School of Medicine; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; on the staff of St. Luke's Hospital; consultant in medicine, San Francisco Hospital; died Dec. 3, 1946, aged 69, of metastatic epithelioma.

Samuel Hirshfeld ⊕ Los Angeles; Columbia University College of Physicians and Surgeons, New York, 1918; fellow of the American College of Surgeons; on the staffs of the Hospital of the Good Samaritan and Cedars of Lebanon Hospital; died Dec. 13, 1946, aged 51.

William Milo Hogle ⊕ Keokuk, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1901; served as president of the Lee County Medical Society; on the staffs of the Graham Protestant and St. Joseph's hospitals; died Dec. 29, 1946, aged 72, of heart disease.

Lewis Holladay, Orange, Va.; University of Virginia Department of Medicine, Charlottesville, 1896; member of the American Medical Association; served as a member of the examining boards of World wars I and II, member of the state board of medical examiners, as county coroner, as county health officer and as local surgeon for Chesapeake and Ohio Railroad; member of the board of directors of the National Bank of Orange; died Dec. 10, 1946, aged 77, of coronary thrombosis.

Alonzo Huffman, Russell, Ky.; Medical College of Virginia, Richmond, 1928; member of the American Medical Association; served overseas during World War I; organized the county health department and served as a member of the county board of health; past president of the Rotary Club; physician for the Chesapeake and Ohio Railway; on the staff of the Lawrence County General Hospital in Ironton, Ohio, where he died Dec. 24, 1946, aged 50, of heart disease.

Edgar Hamill Hughes, Brooklyn; Fordham University School of Medicine, New York, 1914; specialist certified by the American Board of Otolaryngology; served on the staffs of St. Mary's, St. Peter's and Brooklyn hospitals; died Dec. 27, 1946, aged 55, of coronary thrombosis.

Mary Elizabeth Hyatt-Smith, Indianapolis; Louisville National Medical College, Medical Department State University, 1909; died Dec. 3, 1946, aged 72, of cardiovascular renal disease.

Nouri Iskandar Ishkhanian ⊕ West New York, N. J.; American University of Beirut School of Medicine, Syria, 1912; on the staff of the North Hudson Hospital in Weehawken; died in the Christ Hospital in Jersey City Dec. 30, 1946, aged 58, of retroperitoneal lymphosarcoma.

Franklin Taylor Kilgore, Yorktown, Ind.; Medical College of Indiana, Indianapolis, 1898; member of the American Medical Association; served overseas during World War I; major, medical reserve corps, not on active duty; formerly county coroner; on the staff of the Ball Memorial Hospital, Muncie, where he died Dec. 22, 1946, aged 70, of arteriosclerotic cardiovascular disease.

Thomas W. Koon, Cumberland, Md.; College of Physicians and Surgeons, Baltimore, 1893; member of the American Medical Association; formerly mayor of Cumberland; member of the state industrial accident commission; on the staff of the Allegany Hospital; died Dec. 5, 1946, aged 76.

James Franklin Lane, Dulce, N. M.; Lincoln Memorial University Medical Department, Knoxville, Tenn., 1910; member of the American Medical Association; special physician at large, Indian Service; served during World War I; died in the Indian Hospital, Santa Fe, Nov. 12, 1946, aged 63.

Joseph Leon Lane ⊕ Seattle; Sioux City (Iowa) College of Medicine, 1903; found dead Dec. 24, 1946, aged 68.

Wilson Terah Lawson, Danville, Ind.; Miami Medical College, Cincinnati, 1878; member of the American Medical Association; for many years secretary and at one time president of the Hendricks County Medical Society; county health officer; formerly county coroner; served as trustee of the Central Normal College; died in the Methodist Hospital, Indianapolis, Dec. 14, 1946, aged 97, of uremia and prostatism.

Walter Sidders Lay ⊕ Hamden, Conn.; Yale University School of Medicine, New Haven, 1901; served during World

War I; colonel, medical reserve corps, U. S. Army, not on active duty; formerly health officer of Hamden; died Dec. 10, 1946, aged 76.

Thomas Everett Leslie, Olive Hill, Ky.; University of Arkansas School of Medicine, Little Rock, 1918; served during World War I; died Dec. 25, 1946, aged 57, of heart disease.

George Griffin Lewis, New York; Albany (N. Y.) Medical College, 1890; member of the American Medical Association; fellow of the American College of Surgeons; on the staff of the Crouse-Irving Hospital; died in December, aged 80, of coronary thrombosis.

Mortimer Lippmann ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1920; affiliated with the Crown Heights Hospital; died Dec. 10, 1946, aged 53, of coronary disease.

Perlee W. McCarty, Indianapolis; Medical College of Indiana, Indianapolis, 1904; died Dec. 23, 1946, aged 76, of bronchopneumonia and cardiovascular renal disease.

Bernard Anthony McDermott, Washington, D. C.; University of Pennsylvania Department of Medicine, Philadelphia, 1908; affiliated with the Veterans Administration; served in the regular army and during World War I; major, medical reserve corps, U. S. Army, not on active duty; died Dec. 24, 1946, aged 62.

Norman Percy McGay ⊕ Cleveland; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1903; died in the Woman's Hospital Dec. 11, 1946, aged 67, of heart disease.

Robert Armand Watters McKeldin, Philadelphia; National University Medical Department, Washington, D. C., 1902; formerly medical supervisor for the board of education; major, medical reserve corps, U. S. Army, not on active duty; died Dec. 10, 1946, aged 71, of cerebral thrombosis.

Alfred Willits McKinley, Drexel Hill, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1937; member of the American Medical Association; served on the staffs of the Fitzgerald-Mercy Hospital in Darby, Delaware County Hospital, Presbyterian Hospital in Philadelphia and the Philadelphia General Hospital, where he died Dec. 6, 1946, aged 36, of pelvic abscess, generalized peritonitis and pulmonary tuberculosis.

Charles Leroy McKittrick, Los Angeles; Kansas City (Mo.) Medical College, 1904; died in the California Hospital Dec. 30, 1946, aged 68, of acute coronary thrombosis.

Clarence Alfred MacMinn, Round Lake, N. Y.; Bellevue Hospital Medical College, New York, 1898; member of the American Medical Association; health officer and school physician; for many years on the staff of the Ellis Hospital in Schenectady; on the staff of the Saratoga Hospital, Saratoga Springs, where he died Dec. 11, 1946, aged 74, of hemorrhage from peptic ulcer.

John Joseph McNamara ⊕ Lowell, Mass.; Tufts College Medical School, Boston, 1923; died Nov. 13, 1946, aged 51, of coronary occlusion.

Frank Fremont Marshall ⊕ L'Anse, Mich.; Harvard Medical School, Boston, 1911; served in France during World War I; president of the township school board; physician designate for the Indian Service, U. S. Department of Interior; at one time physician for the Ford Motor Company; on the staff of St. Joseph's Hospital in Hancock; died in St. Mary's Hospital, Marquette, Dec. 16, 1946, aged 66, of coronary thrombosis.

Francis V. Martin ⊕ Michigan City, Ind.; University of Michigan Homeopathic Medical School, Ann Arbor, 1892; member of the Radiological Society of North America, Inc.; part owner of the Clinic Hospital, where he died Dec. 13, 1946, aged 80, of coronary occlusion.

Thomas Joseph Moran, Alton, Ill.; Chicago Medical School, 1931; member of the American Medical Association; affiliated with St. Joseph's Hospital and Alton Memorial Hospital, where he died Dec. 14, 1946, aged 48, of cerebral hemorrhage.

James Kane Mullen, Pocatello, Idaho; George Washington University School of Medicine, Washington, D. C., 1944; interned at St. Mary's Hospital in San Francisco; served in the medical corps of the U. S. Naval Reserve during World War II; recently received an appointment to the faculty of the University of Colorado School of Medicine and a residency in radiology at the Colorado General Hospital in the city of Denver, where he was shot and killed in a hotel Oct. 1, 1946, aged 26, when struck by a stray bullet.

Charles Augustus O'Quinn, Perry, Fla.; University of Georgia Medical Department, Augusta, 1901; member of the American Medical Association; served as health officer of Madison and Taylor counties; died in Thomasville, Ga., Dec. 9, 1946, aged 75.

Chester Moore Peters ⊕ Canton, Ohio; the Hahnemann Medical College and Hospital, Chicago, 1915; specialist certified by the American Board of Radiology; member of the Radiological Society of North America and the American College of Radiology; served during World War I; colonel, medical reserve corps, not on active duty; formerly health officer of Stark County; for many years on the staff of the Mercy Hospital; died Dec. 7, 1946, aged 65, of cerebral hemorrhage.

Ralph Edgar Pray, Salinas, Calif.; University of Pennsylvania School of Medicine, Philadelphia, 1925; specialist certified by the American Board of Pediatrics; member of the American Academy of Pediatrics and the American Medical Association; began active duty as a major in the medical corps, Army of the United States, in September 1942; served in France and England; service terminated with rank of lieutenant colonel in January 1946; died in San Francisco Dec. 18, 1946, aged 49, of brain tumor.

Robert Black Price ⊕ Jackson, Miss.; Vanderbilt University School of Medicine, Nashville, Tenn., 1906; served as a missionary in China; died Dec. 10, 1946, aged 65.

Carl Christian Rasmussen, Des Moines; Northwestern University Medical School, Chicago, 1925; member of the American Medical Association; formerly a member of the school board in Ashland, Ill.; died in the Winecoff Hotel fire in Atlanta, Ga., Dec. 7, 1946, aged 49.

May Turner Riach ⊕ San Diego, Calif.; George Washington University School of Medicine, Washington, D. C., 1913; died Dec. 7, 1946, aged 56.

Aaron Rokeach, Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1903; died Dec. 6, 1946, aged 70, of cerebral hemorrhage.

Charles Clifford Ross, Hookstown, Pa.; Medical Department of the Western University of Pennsylvania, Pittsburgh, 1907; died Sept. 18, 1946, aged 70, of diabetes mellitus.

Stancill W. Rushing, Detroit; Meharry Medical College, Nashville, 1915; died in the Edyth K. Thomas Memorial Hospital Dec. 22, 1946, aged 63.

Herman Scaison, Mount Vernon, N. Y.; Eclectic Medical College of the City of New York, New York, 1898; served during World War I; medical examiner for Selective Service Board number 101 of New York during World War II; on the staff of the Mount Vernon Hospital, where he died Dec. 12, 1946, aged 70, of infectious hepatitis.

Joseph Semerak ⊕ Oak Park, Ill.; Reliance Medical College, Chicago, 1909; died Dec. 17, 1946, aged 80, of carcinoma.

Thomas Laidlaw Shearer, Baltimore; University of Edinburgh Faculty of Medicine, Scotland, 1882; fellow of the American College of Physicians; acting medical examining officer at Baltimore of recruits for the British and Canadian armies; died Dec. 13, 1946, aged 87, of arteriosclerosis.

Lloyd Otterbein Sholty, LaFayette, Ind.; Indiana University School of Medicine, Indianapolis, 1912; member of the American Medical Association; served during World War I; on the staffs of St. Elizabeth and LaFayette Home hospitals; died Dec. 24, 1946, aged 62, of coronary occlusion.

Howard Hazlett Smith, Rocky River, Ohio; Western Reserve University Medical Department, Cleveland, 1912; member of the American Medical Association; affiliated with the Lakewood (Ohio) Hospital; died Dec. 23, 1946, aged 60, of cerebral hemorrhage.

Michael Smith ⊕ West Palm Beach, Fla.; University and Bellevue Hospital Medical College, New York, 1932; interned at the Nathan and Miriam Barnert Memorial Hospital in Paterson, N. J.; awarded the Bronze Star Medal for service during World War II; began active duty as a captain in the Medical Corps, Army of the United States, on Dec. 28, 1942 and was released in November 1945 with the rank of major; died Dec. 5, 1946, aged 38, of coronary thrombosis.

Benjamin Charles Tarnutzer ⊕ Los Angeles; Western Reserve University Medical Department, Cleveland, 1902; served on the staff of the California Hospital; died Nov. 11, 1946, aged 68, of heart disease.

Frederick Glenn Templeton, West Frankfort, Ill.; Loyola University School of Medicine, Chicago, 1934; interned at the Cook County Hospital in Chicago and St. Catherine's Hospital in East Chicago, Ind.; served during World War II; drowned Nov. 26, 1946, aged 37, when a motorboat sank on a lake when he was duck hunting.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 25, 1947.

The Conflict on the National Health Service Act

As reported in a previous letter, the presidents of the three Colleges—of Physicians, of Surgeons and of Obstetrics and Gynecology—intervened in the conflict between the British Medical Association and the minister of health, Mr. Bevan, by sending a joint letter. To this the minister made a conciliatory reply. As a result the council of the British Medical Association held a special meeting and revoked its previous recommendation to the representative body of the association to refuse to negotiate with him. According to the official report the council carefully examined the situation created by Mr. Bevan's letter as regards both its tone and its substance. The chairman of the council strongly contested the minister's statement that he had been willing to negotiate with the profession. It was evident that the minister had taken serious note of the position following the plebiscite and the council's recommendation. The following important resolution was passed by the council without any dissent: "That the association, having considered the final results of the plebiscite and the minister's letter of January 6 to the presidents of the Royal Colleges, and desiring to secure for the people the best possible health service, is willing that discussions be entered into with the minister to that end, provided such discussions are comprehensive in their scope and that the possibility that they may lead to further legislation is not excluded; that after the conclusion of these discussions a second plebiscite of the profession be taken on the issue of entering the service." So it looks as if, after all, the conflict between the profession and the government as to a national health service will be settled in the characteristically English way of compromise.

A Food Delivery Scheme for the Aged to Diminish the Overcrowding of Hospitals

At a conference on special modes of catering for the aged, invalids and infirm, organized by the London Council of Social Service, it was pointed out that the present overcrowding of hospitals could be relieved by a well organized catering service delivering meals to invalids in their own homes. Dr. F. Avery Jones of the Central Middlesex Hospital said that at least 10 to 15 per cent of patients were admitted to the hospital not for any specific treatment but because they needed food, rest and medical supervision which should be provided at home. A food delivery service which served midday meals to the sick and infirm would bridge the difficult gap when the working members of the family were absent, and thus provide an alternative to hospital admission. The scheme was feasible, and was already being carried out on a small scale by the Invalid Kitchens of London. He also suggested another way in which a catering service could reduce hospital admissions. Old people living alone did not always eat enough. They lost energy and had less inclination to queue for food at the shops (a practice due to the shortage of food and rationing of the war which still continues). Their resistance to illness was diminished and they eventually came to the hospital with maladies such as anemia and bronchitis. If doctors could arrange for them to eat at special centers, this would be better medicine than a white bottle of placebo.

Dr. Magnus Pyke, principal scientific officer to the Ministry of Food, said there were many serious gaps in the scientific knowledge of the physiologic requirements of the aged. The London Council of Social Service would make a valuable contribution to the problem if it could bring together scientific workers and the aged people whose needs were so urgently calling for study. The chairman of the Middlesex Public Health Committee said that old people should receive the same kind of assistance that was afforded to the blind.

The Extermination of "Phossy Jaw"

The death at the age of 70 of Sir Alexander Maguire, match manufacturer, recalls the long campaign against "phossy jaw" (phosphorus necrosis) in which he played a decisive part. The ravages of this disease extended all over the world wherever matches were made. After much negotiation and some opposition Maguire got the consent of his fellow manufacturers to the necessary legislation for the white phosphorus match prohibition bill, which became law in 1908. This good example soon spread to the British dominions and to the United States. The result was the disappearance from the world of a serious disease—surely a unique event in preventive medicine.

Inoculation of Intending Travelers Against Yellow Fever

The Ministry of Health has arranged for travelers who intend to visit yellow fever areas to have free inoculation against the disease. These will be given in London at the Wellcome Foundation and at nine of the principal cities of Britain, where centers will be established for the purpose.

BELGIUM

(From Our Regular Correspondent)

Jan. 16, 1947.

New Extracts of Digitalis

At the Practical Pharmacologic Laboratory of the University of Liége the problem of cardioactive heterosides of digitalis purpurea has been studied by Florent Ulrix by means of the chromatograph. This technic has permitted the total separation of the various heterosides and has made evident the nonexistence of gitalin in the examined indigenous digitalis. In addition, the presence of active heterosides, unknown and probably more complex than Purpurea glucosides A and B of Stoll, have been demonstrated. They have been designated as Purpurea glucosides A_2 and B_2 and Purpurea glucosides A_3 and B_3. The chromatographic method is simpler than the usual methods and makes it possible to obtain pure heterosides. A patent has been sought on the method.

Ovarian Hormone and Mammary Cancer

Dr. Desaive has recently published in the *Acta Chirurgica Belgica* a study of the influence of ovarian suppression on the development of mammary cancer. If the ovary exerts an influence on developing mammary cancer, this influence is probably only unfavorable; castration, preferably the roentgenologic form, must thus, at least in theory, attain the role of an accessory treatment of mammary cancer. However, in practice this method has not given sufficiently convincing proof that it deserves to be generally recommended. Consequently, endocrine studies do not justify an attempted prophylaxis of mammary cancer by this means

Silicosis

Dr. Langelez, chief of the Service of Occupational Medicine, professor at the University of Brussels and in the Institute of Higher Studies, will publish an important work on silicosis. In Belgium only since 1937 has the pathologic condition of the lung due to the inhalation of silicon dioxide been recognized as ground for legal compensation provided for occupational diseases. Synthesizing the contributions of various investigators, the work of numerous laboratories and the discussions of several conventions, Langelez contributes information that will be useful to industrial physicians and to those concerned with legal medicine.

Lead Intoxication from Bread

Before the Academy of Medicine of Belgium, Nélis and Stijns described a large number of alimentary lead intoxications in a Luxembourg community. Inquiry revealed that the source was a flour which contained lead and had been obtained from a mill the grindstone of which had been relined with lead over a total surface of 300 square centimeters. Samples of the milled flours contained between 40 and 130 mg. of lead per kilogram, and bread made with this flour contained 30 mg. per kilogram. In all those who became poisoned a fifteen day period of fatigue was followed suddenly by abdominal pains, stubborn constipation, bile stained vomit and anorexia. Loss of weight and anemia generally were severe. There was neither fever nor changes in arterial pressure. Burton's blue line on the gums was distinct in nearly all the cases. The blood contained numerous erythrocytes with basophil granulations. The urine contained lead. All patients were cured, but the majority had a prolonged convalescence. The authors noted that individual sensitivity to lead varies greatly and that children exhibited a special resistance to this form of intoxication.

Pneumonoconiosis in Cutters of Fireproof Brick

Before the Belgian Society of Occupational Medicine M. André reported the professional and pathologic history of a certain number of workers who, after working for years in a limestone quarry, later worked as cutters of fireproof bricks in glass factories and metallurgical shops. These men were completely incapacitated for work because of dyspnea, which in some cases was extreme. The inhaled dusts contain particles of silica. X-ray films reveal the development and aggravation of the disorder. In some there is true silicosis; in others a silicotuberculous syndrome exists; in still others simple fibrosis. Most striking is the absence of parallelism between the roentgenograms which generally do not show advanced development and the grave functional symptoms. The author concludes that the cutters of fireproof bricks should benefit from the advantages provided by the law on occupational diseases (pneumonoconioses).

ITALY

(From Our Regular Correspondent)

Jan. 20, 1947.

Hypertrophy of the Thymus

Scarzella and Benassi of the Ospedale Civile di Biella, Piemonte, are publishing through Casa Editrice Ambrosiana, Milan, an interesting work on 96 cases of infantile thymus hypertrophy. In each case the history, radiography of the thorax, treatment and an account of the course of the illness are given, with a review after several years. The symptoms of hypertrophy include a tendency to cyanosis, with a paroxysmal tendency at the slightest effort made by child (prolonged suckling, coughing), thymus asthma and finally, in serious cases, thymic death. Thymic death happens so unexpectedly that sometimes, as Curshmann of Rostock remarks, it is a convenient *diagnosis* resorted to in the case of the unexpected death of an infant, when the cause cannot be determined. Sometimes, in fact, it follows a slight fall, a slight knock or an injection of serum. The concentration of many cases in limited areas of Piemonte has suggested the opinion that thymus hypertrophy may be attributed to special feeding adopted by the mothers during pregnancy. This does not seem to be shared by the writers who invariably found the mothers feeding on diets of definite nutritive value.

STATUS THYMICOLYMPHATICUS

When thymic hypertrophy persists, particularly morbid manifestations can be traced in adolescence: hypogenitalism, putting on of fat with a rounding of the body form in males, and strong tendencies to allergic illness. Is the cause of status thymicolymphaticus (defined by Dr. Pende as a hyperthymic syndrome and as probably due to the active glutathione body of the thymic hormone) due to thymic hypertrophy (which is found in some babies still breast feeding?). The question is important because, given the simplicity of the procedure by which hypertrophy of the gland can be ascertained by x-ray and that the hypertrophy can be diminished with few applications of x-ray irradiations, the problem could be resolved by preventive treatment with radiation in early infancy. According to the writers the thymus gland is involved in the nutritive mechanism of carbohydrates. Pende, an Italian endocrinologist, claims to cure the illness, which he describes as "hyperthymic syndrome" (which is none other than an adolescent thymicolymphatic illness) by the application of x-rays. Consequently, since, both with a curtailing of the carbohydrates in the diet and with the use of x-rays in irradiation of the thymus, the thymicolymphaticus state of adolescents can be successfully modified, a relation between the two morbid conditions can hardly be denied.

THYMIC DEATH

To what is thymic death due? A simple shock can cause it. It was thought to be due to an excess of thymic hormone, which acted on the myocardial fibers. Lability of the myocardial fibers would result in a general grave form of atonia and asthenia, owing to which the slightest strain might have fatal results. Yet the writers, at necropsy, have never found signs of lesions of the myocardium. They believe that the myocardium is affected indirectly. Why in thymic hypertrophy is the heart always enlarged? The reason is that the enlarged gland presses mechanically on the large ducts at the base of the heart and causes a circulatory stasis, so that, following a regression of the hypertrophy on application of x-rays to the thymus, the heart also returns to normal size. There are, however, some cases in which the heart, though becoming normal through reduction of the size of the thymus, has shown signs of unsuspected overstrain at the onset of a successive illness. This is illustrated by a baby whose heart was weakened because of an acute infective illness, though the x-rays showed a reduction to normal after irradiation of the thymus. In an affected myocardium other factors exist apart from the existence of a simple cardiac hypertrophy. It is put forward that a cellular degeneration and lymphocytic infiltration of the myocardium also exist. At the same time the pressure on the bronchial veins and the azygos system exercised by a large thymus has repercussions also on the encephalic mass. Then follows, as the result of cerebral stasis, a disturbance of the cardiac-respiratory innervation whose center is controlled by the brain. Added to this is the compression of the pulmonary vein caused by the thymus. Thymic death, therefore, would presumably be due to a complex of factors: mechanical circulatory cardiac stasis, bronchial circulatory stasis (of the pulmonary vein) and a disturbance of the cardiac-respiratory innervation, typically characterized by the violent fatal effect of the presumable blocking of a vagal discharge.

Lack of American Medical Books in Italy

Dr. Macdonald in his communication from Australia in The Journal Dec. 21, 1946 is right in declaring that The Journal is almost universally read. In Italy it is read avidly and is looked for in the libraries of the universities which receive it. It is the one which really informs the Italian medical public about the great production of American medical literature. However much we look for American medical books here, we can find but few. They are in great demand and would sell well, particularly those on nutrition, cardiology, biochemistry, embryology, radiology and electrocardiology. An exhibition in Milan this week of 1,500 American books attracted many visitors.

Correspondence

ETHICAL RESPONSIBILITIES OF THE GERMAN MEDICAL PROFESSION

To the Editor:—Permit me to register the opinion opposite to that expressed by Dr. Enloe in The Journal, Dec. 28, 1946. Dr. Enloe thinks that it is wrong "to condemn the German medical profession as a body" for the brutalities committed by physicians in Nazi concentration camps. He gives two reasons: one, that "the German organizations" did not know; two, that they couldn't do anything about it. It is my opinion, that not only did they know enough about it, but it was their duty to know. With regard to the question of what they could have done about it, Dr. Enloe states very correctly that "One was better off not to know."

Our ethical attitude toward the German medical profession is not just a theoretical problem. It has a great deal to do with our own responsibilities. For years now, lay people and journalists from first and second hand information have been making very serious accusations concerning brutalities in American psychiatric hospitals. It is not a question in this communication of mine whether or not these allegations may be true (I, for one, believe they are); but if at a later date it should turn out that widespread brutalities do exist, that they have never been as thoroughly and skilfully investigated as they should have been and that psychiatrists in high places have never been held to account for permitting them, then it is my opinion that the whole American psychiatric profession and the foundations that have made large contributions to psychiatric institutions must bear the full responsibility. It may be true that one is "better off not to know." But that would not be an excuse; it would be an indictment.

Frederic Wertham, M.D., New York.

ASSAY OF THIAMINE

To the Editor:—In The Journal Dec. 7, 1946, under the heading "Bureau of Investigation," appears an abstract of a notice of judgment obtained by the Food and Drug Administration against the firm of Charles C. Haskell & Co., Inc., because of the shipment in interstate commerce of a preparation known as Pantabee, which was considered as misbranded because of a claimed deficiency of 25 per cent in its thiamine content. The date of this shipment as given in the abstract indicates that it occurred almost four years ago, in January 1943.

Pantabee is a powder consisting of a yeast concentrate fortified by addition of synthetic vitamins of the B complex; each capsule was stated to contain 1 mg. of thiamine hydrochloride. The lot from which the Food and Drug Administration obtained samples was prepared in April 1942 in such a manner that each capsule contained 6 grains of the yeast concentrate, containing slightly more than 0.2 mg. of thiamine hydrochloride. To this was added, per capsule, 0.8 mg. of thiamine hydrochloride, as well as stated amounts of the other B vitamins. According to the assay by the Food and Drug Administration there was present *only* 0.75 mg. of thiamine hydrochloride per capsule.

In view of the careful control exercised in the mixing of Pantabee powder, we submitted samples of this same lot for assay by three independent laboratories, to receive conflicting and confusing reports. The problem was investigated by Dr. Richard Neale, formerly of this city, and led to his conclusion that the yeast used by us interfered with the determination of thiamine by a colorimetric method he used. Subsequently Brown, Hamm and Harrison (*J. Biol. Chem.* **151**:153, 1943) carried out a careful comparison of the results of bioassay and assay by the thiochrome method for determination of thiamine and, from assay of enriched tablets from three different manufacturers, found that the thiochrome method consistently failed to indicate the true thiamine content, as indicated by the bioassay method.

We are unaware what method was used by the Food and Drug Administration in determining thiamine in our Pantabee capsules. Our request that they add thiamine hydrochloride to a sample of the yeast extract used by us and repeat their assay was refused on the ground that the agency could not carry on such "collaborative" investigations.

We felt and still feel that there is good reason to believe that the samples of Pantabee capsules tested by the Food and Drug Administration were not deficient in thiamine content but we have subsequently added an excess of 25 per cent synthetic thiamine hydrochloride in the preparation of Pantabee powder, and assays of each lot have consistently shown more than 1 mg. of thiamine hydrochloride per capsule.

Charles C. Haskell & Co., Inc.,
Charles C. Haskell, M.D., Richmond, Va.

PENICILLIN IN VINCENT'S ANGINA

To the Editor:—In the abstract of my paper on "Penicillin in the Oral Therapy of Vincent's Angina and Acute Follicular Tonsillitis" (*Arch. Otolaryng.* **44**:409 [Oct.] 1946) appearing in The Journal January 11 appears the statement "Hopp treated 25 patients who had Vincent's angina with penicillin sodium in gelatin capsules, 10,000 units each, one being given every two hours for ten doses." This wording might give the impression to the reader that capsules were to be swallowed for possible systemic effect whereas in the original work the capsules were permitted to dissolve in the buccal sulcus. Of course, this method of administration did not exclude the possibility of a systemic absorption of penicillin from the swallowing of saturated saliva as I did no penicillin blood level determinations because of the lack of the necessary facilities, overseas. However, the work was intended primarily as a test of local effect of penicillin.

Eugene S. Hopp, M.D., San Francisco.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in The Journal, Feb. 22, page 569.

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: *Parts I and II.* Various centers, March 17-19. *Part III.* Various centers, June. Durham, Oct. 21-23. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology: *Oral.* Los Angeles, April 11-12. Sec., Dr. P. M. Wood, 745 Fifth Ave., New York.

American Board of Dermatology and Syphilology: *Oral.* New York City, April 25-27. Sec., Dr. George M. Lewis, 66 E. 66th St., New York 21.

American Board of Internal Medicine: *Written.* Chicago, March 17. *Oral.* Philadelphia, June 5-7. Final date for filing application is April 1. Asst. Sec., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

American Board of Obstetrics and Gynecology: *Part II.* Pittsburgh. June 1-7. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Otolaryngology: Chicago, Oct. 7-11. Sec., Dr. D. M. Lierle, University Hospitals, Iowa City, Ia.

American Board of Pathology: Philadelphia, June 3-4. Final date for filing application is April 15. Sec., Dr. Robert A. Moore, Euclid Ave. and Kings Highway, St. Louis 10.

American Board of Pediatrics: Effective May 1, application will be $125.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Chiropractic Practice Act: Board's Right to Cancel Licenses Without Notice or Hearing—Reversal of Previous Decision.—The petitioners, about twenty-five chiropractors, filed a proceeding for a writ of mandate against the defendant, state board of chiropractic examiners, commanding the board to annul its order canceling the petitioners' licenses to practice chiropractic. From a judgment granting the writ, the board appealed to the district court of appeals, third district, California.

In July 1942 the defendant board adopted a resolution authorizing the giving of examinations for chiropractic licenses by one member of the board, the purpose being to grant emergency examinations for applicants expecting to go into the armed services and permitting them to take examinations under the authority of the board member nearest their residence. Pursuant to this resolution a number of examinations were given by the individual members of the board. The examinations were of the same type and character as those previously given by the entire board, and the questions asked were taken from those which had been approved by the board for previous examinations. In January 1943 the entire board considered all the examination papers and, by resolution, approved the special examinations and the licenses issued as a result thereof. In June 1943 an investigator of the board swore out a complaint, and an order was issued against the petitioners requiring them to show cause why their several licenses should not be revoked. A hearing was had in the matter in July, at which time the board found that "none of the matters presented was ground for revocation of the licenses, that all were issued by the Board after a resolution had been duly and regularly passed by it authorizing the giving of special examinations; that each of such examinations was given by a member of the Board from questions of the same type as used in connection with previous examinations, that each of the persons examined passed by more than a passing grade, that there had been no complaints as to their ability, knowledge or skill, that the Board had authorized special examinations in the past for special purposes, and that after the examinations were held the papers in each case, together with the results, had been forwarded to Sacramento, after which the grades were duly entered and the licenses were issued and signed by four or five members of the Board in regular sessions; that although some applicants were given numbers, nearly all examinations were given to individuals at individual times and sittings, and it would have been an idle act to designate the person by number, and that this requirement had been waived by the Board's resolution pursuant to powers given by section 4 of the Act giving the Board power to adopt rules and regulations for the performance of its work; and that the Board deemed it proper and necessary to give these special examinations in the manner given." In May 1944, by which time the personnel of the defendant board had completely changed, the board adopted a resolution canceling the license of each petitioner and directing the board investigator to obtain the certificates and to transmit them to the board. This resolution was made without notice or hearing.

The Chiropractic Law (Deering's General Laws, act 4811) provides for a board of five members. Section 4 gives the board power to adopt such rules and regulations as it may deem proper and necessary for the performance of its work, to examine applicants and to issue and revoke licenses to practice chiropractic. Section 6 provides that the board shall meet "as a board of examiners" on stated days in January and July, and at such other times and places as may be found necessary for performance of their duties, that each applicant shall be designated by a number instead of a name so that identity will not be disclosed to the examiners until the papers are graded and that all examinations shall be in writing. Section 10 provides that the board may revoke a license or may cause a licensee's name to be removed from all records of licensed practitioners of chiropractic in this state, on the following grounds: for "the employment of fraud or deception in applying for a license or in passing an examination" as provided in this act; for practicing under a false or assumed name; for the personation of another practitioner of like or a different name; for the conviction of a crime involving moral turpitude, for habitual intemperance and for advertising in a proscribed manner. Section 10 further provides that any licentiate against whom any of the foregoing grounds for revoking a license are presented to the board with a view to revoking his license shall be furnished with a copy of the complaint and shall have a hearing before the board in person or by an attorney.

The defendant contended that all of the proceedings prior to May 1944 were void, and it based such contention on the premise that, under the act, examinations for licenses must be given by the board sitting as such, that the giving of an examination by a single member is unauthorized, and that, even though such examinations may have been taken and passed by the applicants and the licenses issued thereon signed and approved by the members, nevertheless, since it does not appear that the board sitting as such prepared the question, or that the board or a majority of its members were present when the examinations were given, or that the papers presented by the examinees were graded by the board as such, and because it appears that the applicants were not designated by number but that their identity was known at the time the examinations were given, and even though the questions asked were those which had previously been prepared by the board, the examinations were passed with satisfactory grades, and the licensees were themselves without fault, nevertheless their licenses may be summarily canceled by the board, without notice or hearing.

The court pointed out that none of the cases cited by the board hold that because a statute provides, as does the one before us, that the board "shall have power: . . . (c) To examine applicants and to issue and revoke licenses to practice chiropractic, as herein provided," it necessarily follows that each and every step taken in the giving of examinations must be made by the board at a regularly convened meeting. Though this act does not provide for the giving of examinations by individual members, it does not expressly prohibit such action if authorized by the board at a regularly convened meeting. Even assuming that such action was authorized, the court continued, the question to be decided is whether the board had the power, without notice, and without further charges or evidence, to reverse its previous action and cancel the licenses in May 1944, after having issued and signed the licenses in due form and approved their issuance by a resolution adopted in January 1943, and having further found, after a full hearing in July 1943, that there were no grounds for canceling said licenses. We are of the opinion, said the court, that the board was without power. It must be conceded that no such power was granted by the act itself and that section 10, providing for the revocation of licenses by the board, specifies the grounds of such revocation and requires notice and a hearing on such charges as constitute grounds for revocation. Where a board has once acted on a motion it has exhausted its power and may not thereafter reverse the decision previously made.

Finally, the board attempted to justify its action by distinguishing between the revocation of a license and its "cancellation," thus impliedly conceding that it had no power to "revoke" except for grounds stated in section 10(a) after notice and hearing. The board argued that it had the power to "cancel" petitioners' licenses because section 10(b) provides that at anytime after two years following the "revocation or cancellation" of a license the board may reissue same. But, concluded the court, it is not reasonable to assume that the legislature, after particularly specifying the grounds on which a license can be revoked, intended by such mere use of the words "revocation or cancellation" to distinguish between the two and thus authorize an evasion of the provisions of section 10(a) by designating the process of annulment of the rights of a licensee as cancellation rather than revocation, especially since "cancel" is defined by Webster as meaning "to revoke or recall."

Accordingly, the judgment of the trial court directing the board of examiners to annul the order canceling the petitioners' licenses to practice chiropractic, and to refrain from interfering with their practice, was affirmed.—*Aylward v. State Board of Chiropractic Examiners, 172 P. (2d) 903 (Calif., 1946).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Surgery, New York

72:771-922 (Dec.) 1946

Differential Diagnosis in Acute Surgical Conditions of Abdomen. H. W. Meyer.—p. 773.
Differential Diagnosis of Surgical Renal Lesions. M. F. Campbell. —p. 786.
Acute Surgical Lesions of Pelvis. W. A. Coventry.—p. 800.
*Treatment of Acute Perforation of Duodenal Ulcer. R. R. Graham. —p. 802.
Surgical Treatment of Cholecystitis. R. L. Sanders.—p. 811.
Acute Pancreatitis. C. B. Puestow, W. E. Looby and T. S. Risley. —p. 818.
Traumatic Lesions of Abdomen with Ruptured Viscera. A. R. Metz, R. Householder and J. F. DePree.—p. 826.
Progress in Treatment of Acute Appendicitis. K. A. Meyer, W. H. Requarth and D. D. Kozoll.—p. 830.
Acute Surgical Conditions of Abdomen: Congenital Lesions. C. W. Mayo and J. H. Remington.—p. 841.
Peritonitis. G. Crile Jr.—p. 859.
Early Indications of Adhesive Small Bowel Obstruction. C. J. Hunt. —p. 865.
Gunshot. E. E. Larson.—p. 869.
Present Status of Problem of Regional Ileitis. J. H. Garlock.—p. 875.
Mesenteric Lymphadenitis. E. P. Coleman.—p. 879.
Symptomatic Abdominal Epilepsy. M. T. Moore.—p. 883.
Preoperative and Postoperative Care of Acute Surgical Conditions of Abdomen. D. L. Dickerson.—p. 900.
Preoperative and Postoperative Care in Major Colonic Surgery. S. T. Ross.—p. 910.

Perforation of Duodenal Ulcer.—Graham reports 130 consecutive cases of acute perforation of a duodenal ulcer. Two patients refused operation, 2 were moribund on admission and 1 died before the diagnosis was made. Of the 125 operated on 8 died. The cause of a patient's serious clinical state following perforation of a duodenal ulcer is not the bacterial peritonitis, but the nutritional and biochemical imbalance associated with shock. Adequate correction of these disturbances decreases the mortality. An operation should deal in the most simple manner with the lesion responsible for the emergency. Gastroenterostomy and gastric resection have no place in this management. Fibrin is responsible for the closure of all gastrointestinal perforations. A free or attached omental graft held in position over the perforation by three sutures results in the gross formation of fibrin to close the perforation. Drainage of the abdomen at the time of closure of the ulcer is unnecessary.

Anesthesiology, New York

7:599-712 (Nov.) 1946

Pure Ether and Impurities: A Review. W. Bourne.—p. 599.
Combined Anesthesia Record and Statistical Card. J. W. Pender.—p. 606.
Premedication in Infants and Children. M. D. Leigh and M. Kathleen Belton.—p. 611.
Nitrous Oxide-Oxygen Anesthesia. F. W. Clement.—p. 616.
Continuous Spinal Anesthesia: Modification for Control of Dosage. J. B. Dillon and C. C. Wycoff.—p. 631.
*Atelectasis During Operations on Upper Urinary Tract. A. Faulconer Jr., T. R. Gaines and J. S. Grove.—p. 635.
Resuscitation and Anesthesia. H. K. Beecher.—p. 644.
Operating Room Deaths. H. F. Bishop.—p. 651.
Anesthesia: XXI. n-Propyl Methyl Ether as Inhalation Anesthetic in Man: (Preliminary Report). Mary Louise T. White, S. M. Shand and J. C. Krantz Jr.—p. 663.

Atelectasis During Operations on Upper Urinary Tract.—Faulconer and his co-workers report the occurrence of 8 cases of pulmonary atelectasis in a series of 85 operative procedures on the upper urinary tract in an army hospital. The atelectasis developed in each case in the contralateral lung. The only etiologic factor common to every case was the lateral position, resulting in unphysiologic cramping of the dependent lung. A wide variety of anesthetic agents and methods was used and seemed to have no important bearing on the postoperative pulmonary complication. No patient received prophylactic carbon dioxide-oxygen hyperventilation. The suggestion is made that an important point in prophylaxis is the shifting of the patient's position to the operated side at frequent intervals. The most satisfactory treatment is bronchoscopic aspiration.

Archives of Ophthalmology, Chicago

36:661-796 (Dec.) 1946

Physiologic Factors in Differential Diagnosis of Paralysis of Superior Rectus and Superior Oblique Muscles. F. H. Adler.—p. 661.
Production of Cataracts in Chicks with Dinitrophenol. J. W. Bettman. —p. 674.
*Use of Neutralizing Antibody Test in Diagnosis of Human Toxoplasmic Choroiditis. L. V. Johnson.—p. 677.
Effect of Quality of Illumination on Results of Ishihara Test. L. H. Hardy, Gertrude Rand and M. Catherine Rittler.—p. 685.
Cyclofusional Movements. K. N. Ogle and V. J. Ellerbrock.—p. 700.

Neutralizing Antibody Test for Toxoplasmic Choroiditis.—Johnson describes a neutralizing antibody test for Toxoplasma. Thirty-two selected patients with chorioretinitis were tested; 20 of these gave positive reactions to the neutralizing antibody test. Cerebral calcification in patients who had toxoplasmosis with chorioretinitis was not observed when the age at onset was known to be over 15 years. If the disease was present at birth, calcification was evident. A mother with reactivated toxoplasmic choroiditis and a woman who was probably congenitally infected each gave birth to a normal child. Two children probably infected congenitally with toxoplasmosis had younger siblings-german with antibody protection but no demonstrable infection. A case of chronic toxoplasmosis is described in which a quiescent chorioretinal lesion became activated during each of three pregnancies.

Canadian Medical Association Journal, Montreal

55:543-644 (Dec.) 1946

Present Status of Penicillin in Treatment of Subacute Bacterial Endocarditis. H. E. Rykert.—p. 543.
Some Experiences in Treatment of Perennial Allergic Rhinitis. P. H. Sprague and T. H. Aaron.—p. 548.
Phlebitis of Lower Extremity and Its Sequelae. J. C. Luke.—p. 552.
Psychoses with Somatic Disease. H. Lehmann.—p. 557.
Local Anesthesia in Obstetrics and Gynecology. R. Mitchell.—p. 560.
Precision in Care of Operative Patient. R. T. Knight.—p. 562.
Tularemia, with Report of 9 Cases. J. W. Scott and A. L. Macbeth. —p. 564.
Practical Methods of Testing Hearing for Hospitals and Offices. D. E. S. Wishart.—p. 567.
Visual Field Changes in Syphilis of Central Nervous System. J. A. McLean.—p. 571.
Ureterovesical Anastomosis When Proximal Portion of Ureter Is Short. R. H. Flocks.—p. 574.
Radiology and General Practitioner. B. J. Harrison.—p. 576.
*Study of Ascorbic Acid Metabolism of Healthy Young Canadians. W. M. Johnstone, T. G H. Drake, F. F. Tisdall and F. H. Harvie. —p. 581.
Dissecting Aneurysm of Aorta (Study of Series of 14 Cases). J. D. Palmer and A. K. Mathisen.—p. 585.

Ascorbic Acid Metabolism.—Investigators in the field of nutrition usually consider that a fasting blood plasma ascorbic acid level of 0.6 mg. per hundred cubic centimeters is the lowest level consistent with normal ascorbic acid metabolism. Study of the fasting blood plasma ascorbic acid levels of 372 young Canadians gave values below 0.6 mg. per hundred cubic centimeters in 55 per cent and 0.25 mg. in 19 per cent. It was found that a great change in the intake of ascorbic acid will reflect itself in the fasting blood plasma ascorbic acid content in one to two weeks. Studies on the effect of relatively constant levels of intake of free ascorbic acid over periods of six to eight months revealed that with an average daily intake of 7.9 mg. the average fasting plasma level was 0.22 mg., with an intake of 22.3 mg. it was 0.26 mg., with 62.5 mg. it was 0.75 mg., with 78.3 mg. it was 0.87 mg. and with an intake of 437.5 mg. the blood plasma level was 1.49 mg. While every effort should be made to conserve the ascorbic acid content of foods in their preparation, cooking and serving, a small number of foods if taken each day will supply the major portion of the recommended amount of ascorbic acid These foods and the daily amounts required are set out in a table.

Cancer Research, Baltimore

6:657-772 (Dec.) 1946

Carcinogenic Substances in Human Tissues. I. Hieger.—p. 657.
Multiple Peritoneal Sarcoma in Rats from Intraperitoneal Injection of Washed Ground Tenia Larvae. W. F. Dunning and M. R. Curtis.—p. 668.
Observations on Carcinogenicity of 1,2,3,4-Dibenzophenanthrene and Its 9-Methyl and 10-Methyl Derivatives. P. N. Harris and C. K. Bradsher.—p. 671.
Inhibition of Carcinogenicity of p-Dimethylaminoazobenzene by Certain Detergents and Effect of Diet on Levels of Azo Dyes in Rat Tissues. J. A. Miller, B. E. Kline and H. P. Rusch.—p. 674.
Effect of Certain Diets on Hepatic Tumor Formation Due to m-Methyl-p-Dimethylaminoazobenzene and o'-Methyl-p-Dimethylaminoazobenzene. Janet E. Giese, C C. Clayton, E. C. Miller and C. A. Baumann.—p. 679.
Intracellular Distribution of Enzymes: II. Distribution of Succinic Dehydrogenase, Cytochrome Oxidase, Adenosinetriphosphatase and Phosphorus Compounds in Normal Rat Liver and Rat Hepatomas. W. C. Schneider.—p. 685.
Phosphorus Compounds in Animal Tissues: IV. Distribution of Nucleic Acids and Other Phosphorus-Containing Compounds in Normal and Malignant Tissues. W. C. Schneider and H. L. Klug.—p. 691.
Attempted Transmission of Acute Leukemia from Man to Man by Sternal Marrow Route. J B. Thiersch.—p. 695.
Metabolism of 3,4-Benzpyrene into 8- and 10-Benzpyrenols in Animal Body. I. Berenblum and R. Schoental.—p. 699.
Neoplasms of Adrenal Cortex in Noncastrate Mice. A. Kirschbaum, Marthella Frantz and W. L. Williams.—p. 707.
Transplantation of Adrenal Cortical Carcinoma. G. W. Woolley and C. C. Little.—p. 712.
Intramedullary Plasma Cell Myeloma Occurring Spontaneously in Dog. F. Bloom.—p. 718.

Diseases of Chest, Chicago

12:515-610 (Nov.-Dec.) 1946

*Clinical Use of Streptomycin in Treatment of Tuberculosis. K. H. Pfuetze, R. P. Glover, E. F. White Jr. and others.—p. 515.
Continuous Immobilization of Lungs by Residence in Equalizing Pressure Chamber in Treatment of Pulmonary Tuberculosis. A. L. Barach.—p. 521.
Psychosomatic Factors in Pulmonary Tuberculosis: Study of 100 Consecutive Army Cases. J. H. Friedman, G. J. Kastlin and S. I. Kooperstein.—p. 539.
Oxidase and Tuberculosis: Physiopathologic Meaning and Possibilities for Diagnosis of Infections by Acid Fast Bacilli: Preliminary Report. P. Seabra.—p. 550.
Primary Endothelioma of Pleura. H. Weissman.—p. 562.
Tuberculosis in Greece: Present Conditions and Future Considerations. P. A. Theodos.—p. 571.

Streptomycin in Tuberculosis.—This report by Pfuetze and his associates is concerned with 30 cases of pulmonary tuberculosis in which streptomycin was administered for from two to six months. With few exceptions the patients had tuberculosis that was progressive or did not respond to rest in bed. The daily dose varied from 1 to 4 Gm. It was divided into doses which were given every three to six hours by intramuscular or deep subcutaneous injection. It was found that streptomycin resembles other modern antibacterial agents in suppressing the multiplication of sensitive organisms without complete eradication of the infection. As a result there is a tendency for the disease to recur following cessation of streptomycin treatment. The author's believe that streptomycin may help in conjunction with other forms of treatment but that it should not be regarded as a substitute for well established forms of treatment.

Hawaii Medical Journal, Honolulu

6:71-148 (Nov.-Dec.) 1946

Recent Advances in Chemotherapy. C. D. Leake.—p. 81.
Analysis of Queen's Hospital Diabetic Clinic: III (conclusion). Social Worker's Data. Virginia C. Ott Herbst, M. E. Berk and Lillian Elsholtz Page.—p. 95.
Influenzal Meningitis: Report of 2 Cases, 1 Complicated by Brain Abscess. K. M. Amlin.—p. 98.

Indiana State Medical Assn. Journal, Indianapolis

39:585-624 (Nov.) 1946

President's Address: Indiana State Medical Association. J. E. Ferrell.—p. 585.
General Reflections on Geriatrics. W. D. Gatch.—p. 588.
Health Guidance in Advancing Years. W. F. King.—p. 589.
Certain Aspects of Geriatric Medicine. E. J. Stieglitz.—p. 593.
Mental Hygiene in Geriatrics. C. L. Williams.—p. 599.
Arthritis. W. V. Woods.—p. 603.
Cancer. J. L. Arbogast.—p. 605.
Cardiovascular-Renal Diseases. R. A. Solomon.—p. 606.

Journal of Experimental Medicine, New York

84:535-672 (Dec.) 1946

Activating Effect of Magnesium and Other Cations on Hemolytic Function of Complement. M. M. Mayer, A. G. Osler, O. G. Bier and M. Heidelberger.—p. 535.
Fluorescein Circulation Time as Prognostic Sign in Experimental Traumatic Shock. S. C. Wang, E. E. Painter and R. R. Overman.—p. 549.
Construction and Operation of Experimental Rooms for Study of Air Borne Infection. O. H. Robertson, T. T. Puck and H. Wise.—p. 559.
Studies on Malarial Parasites: VI. Chemistry and Metabolism of Normal and Parasitized (P. Knowlesi) Monkey Blood. R. W. McKee, R. A. Ormsbee, C. B. Anfinsen and others.—p. 569.
Id.: Methods and Technics for Cultivation. Q. M. Geiman, C. B. Anfinsen, R. W. McKee and others.—p. 583.
Id.: VIII. Factors Affecting Growth of Plasmodium Knowlesi in Vitro. C. B. Anfinsen, Q. M. Geiman, R. W. McKee and others.—p. 607.
*Studies on Toxicity of Influenza Viruses: I. Effect of Intracerebral Injection of Influenza Viruses. Gertrude Henle and W. Henle.—p. 623.
Id.: II. Effect of Intra-Abdominal and Intravenous Injection of Influenza Viruses. W. Henle and Gertrude Henle.—p. 639.

Toxicity of Influenza Viruses.—The Henles found that intracerebral injection of preparations of influenza viruses into mice led to tonic and clonic convulsions and death in tetanus, usually within twenty-four to seventy-two hours. Microscopic examination revealed destruction of the ependymal lining of the ventricles as the dominant finding. Propagation of the influenza viruses in the central nervous system could not be demonstrated. They concluded that the neurologic reactions were the result of toxic action rather than of virus propagation. The toxic agents could not be separated from the infectious particles by the use of such technics as differential high speed centrifugation, adsorption onto and elution from chicken red cells and precipitation by protamine. The toxic effect of influenza A virus preparations was specifically neutralized by anti-influenza A and not by anti-influenza B serum, and conversely. In addition, antigenic differences were noted between two strains of influenza A virus by this method of testing.

Michigan State Medical Society Journal, Lansing

45:1407-1550 (Nov.) 1946

President's Address. R. S. Morrish.—p. 1471.
Surgical Procedures for Carcinoma of Rectum and Rectosigmoid. C. W. Mayo.—p. 1474.
*Surgery of Pancreas and Lower Biliary Tract. G. Crile Jr.—p. 1478.
Spinal Anesthesia. I. B. Taylor.—p. 1482.
Cerebral Palsy Problem. C. H. Frantz.—p. 1489.
*Adhesive Strapping for Low Back Pain. H. J. Schaubel.—p. 1492.

Surgery of Pancreas and Lower Biliary Tract.—Crile reviews 8 cases of pancreatic lithiasis, in 5 of which various types of pancreatolithotomy and pancreatoduodenectomy were done. Pancreatic lithiasis is probably a result of chronic recurring pancreatitis, for which there is no satisfactory treatment, its cause being unknown. Diagnosis of carcinoma of the body of the pancreas is difficult at a time when it is still curable. Carcinoma of the head of the pancreas and lower bile ducts carries a more favorable prognosis than carcinoma of the body. If operation is performed before the liver suffers irreparable damage, chances of survival are good.

Adhesive Strapping for Low Back Pain.—Schaubel employed an adhesive support supplemented with tongue blade splints for the treatment of low back pain and low back injuries which require temporary immobilization.

Nebraska State Medical Journal, Lincoln

31:477-512 (Dec.) 1946

Remarks on Rehabilitation with Presentation of Model Community Service and Center. A. R. Shands Jr.—p. 480.
Medical Program of Veterans Administration. P. R. Hawley.—p. 485.
Rehabilitation of Sick and Injured. R. L. Diveley.—p. 489.
*Cystic Fibrosis of Pancreas. R. L. J. Kennedy.—p. 493.
Endocrinology and Treatment of Functional Uterine Hemorrhage. E. C. Hamblen.—p. 497.
Clinical Experiences with Diphtheria. C. E. Thompson.—p. 502.

Cystic Fibrosis of the Pancreas.—Kennedy describes the chief aspects of cystic fibrosis of the pancreas on the basis of 28 cases. Evidence of chronic infection of the respiratory tract, steatorrhea and failure to gain weight are the most constant symptoms, and their presence either alone or in combination in an infant or young child should arouse the suspicion of cystic fibrosis of the pancreas. Recent studies indicate that, although the diet should consist predominantly of protein food, the condition of patients may be better if a moderate amount of fat and carbohydrates is included. Protein milk, cottage cheese, bananas, bacon, lean meats, puréed vegetables, orange juice, tomato juice, soybean muffin, honey and grated apple are the foods more commonly employed to build the diet. To this list may be added whole milk, cream and butter.

New England Journal of Medicine, Boston

235:737-772 (Nov. 21) 1946

Medicine in the Postwar World. M. Fishbein.—p. 737.
Reception in England of Henry Jacob Bigelow's Original Paper on Surgical Anesthesia. J. F. Fulton.—p. 745.
Functional Gastrointestinal Disorders: Lessons Learned from Military Medicine. J. A. Halsted.—p. 747.
Medical Aspects of Hypertension. N. A. Welch.—p. 752.
Biochemical Abnormalities During Renal Insufficiency. S. E. Bradley.—p. 755.
Infarction of Lung (?.Septic).—p. 762.
Hepatoma; Cirrhosis of Liver, Alcoholic Type.—p. 766.

Ohio State Medical Journal, Columbus

42:1217-1320 (Dec.) 1946

Transpleural Resections of Esophagus and Stomach for Esophageal Obstruction. F. R. Mautz.—p. 1243.
*Schizophrenia in Children. H. C. Schumacher.—p. 1248.
Use of Thiouracil in Treatment of Hyperthyroidism. J. H. Kotte.—p. 1255.
*Use of Vitamin C in Traumatic Shock. H. N. Holmes.—p. 1261.
Tuberculosis in Mental Schools and Hospitals in Ohio. M. W. Garry.—p. 1265.

Schizophrenia in Children.—Schumacher reports the histories of 7 children who developed schizophrenia before their thirteenth year. He deduces from these case studies that all forms of adaptation are involved and that pathologic disturbance occurs at every level of nervous system function—vegetative, motor, perceptive, intellectual, emotional and social. All integrative functioning is disturbed, but this will manifest itself according to the developmental age of the child. Schizophrenia in children is not to be diagnosed on the resemblance of a few symptoms to those almost diagnostic in the postpuberal age groups. Delusions and hallucinations are rare in children. Only 1 child showed such symptoms. Symptoms vary from one age level of development to another but in all cases represent a severe distortion of the entire personality. The prognosis in this series does not seem to be too favorable, but other recent case reports indicate that up to 50 per cent of schizophrenic children may show improvement.

Vitamin C in Traumatic Shock.—Holmes found that when 500 mg. of vitamin C was given by mouth to patients of average weight within the hour before operation there was clinical evidence of a considerable decrease in traumatic shock. In tooth extraction oral administration of 500 mg. of vitamin C within the hour before operation is remarkably successful in preventing shock or postoperative weakness. Immediate administration of 500 mg. or more of vitamin C to 35 patients who had sustained varied accidents at coal mines seemed to increase shock resistance and to improve their condition. Intravenous injections of 500 or 1,000 mg. of vitamin C in sterile, buffered solutions was used preoperatively and postoperatively in a series of 50 major abdominal operations with excellent results.

Psychosomatic Medicine, Baltimore

8:367-434 (Nov.-Dec.) 1946

Organ Function and Form Perception: Use of Rorschach Method with Cases of Chronic *Arthritis, Parkinsonism* and Arterial *Hypertension.* G. Booth.—p. 367.
*Lumbar Puncture Reactions: Relative Importance of Physiologic and Psychologic Factors. F. C. Redlich, B. E. Moore and I. Kimbell Jr.—p. 386.
Sleep of Patients with Manic-Depressive Psychosis, Depressive Type: Electroencephalographic Study. R. Diaz-Guerrero, J. S. Gottlieb and J. R. Knott.—p. 399.
Psychodynamic and Electroencephalographic Factors in Duodenal Ulcer. L. Moses.—p. 405.

Reactions to Lumbar Puncture.—Redlich and his associates investigated the relative significance of purely physiologic and emotional factors in the pathogenesis of the postlumbar puncture syndrome. One hundred hospitalized psychiatric patients were punctured routinely. From this group were excluded all persons with gross deterioration, extreme psychotic states and contraindications to spinal puncture. Alternate patients were punctured with number 16 and number 22 gage needles. The patients' knowledge of the procedure and its underlying principles proved as low as their anticipatory anxiety was high. About half of the patients had heard of someone who had undergone the test and 23 per cent knew of ill effects in others. The author concludes that drainage is the most significant factor in the production of symptoms following lumbar puncture, outweighing by far the small contribution of anxiety, hypochondriasis and other emotional elements.

Public Health Reports, Washington, D. C.

61:1713-1756 (Nov. 29) 1946

*Statistical Study of Delivery with Continuous Caudal Analgesia, as Compared with Other Methods. S. D. Collins, F. R. Phillips and Dorothy S. Oliver.—p. 1713.

Delivery with Continuous Caudal Analgesia.—Collins and his associates compare the results of continuous caudal analgesia in 2,516 mothers and a control group of 1,024 mothers delivered with the usual anesthetics and sedatives. There was no evidence of danger to the mothers delivered with continuous caudal analgesia, although a third of them showed a considerable drop in systolic blood pressure during the administration of the drug. Complete relief was obtained for 90 per cent of the mothers. The postpartum action of the uterus was better in the caudal than in the control group. There were fewer stillbirths and fewer deaths of infants during the first week of life in the caudal than in the control group.

Rhode Island Medical Journal, Providence

29:893-976 (Dec.) 1946

Medical Aspects of Atomic Bombings. S. Warren.—p. 907.
Future of Medical Research. T. G. Klumpp.—p. 913.
Pathologic Institute and Cost of Medical Care. J. F. Kenney.—p. 933.

Surgery, Gynecology and Obstetrics, Chicago

83:705-854 (Dec.) 1946

*Primary Retroperitoneal Tumors: Report of 95 Cases and Review of Literature. B. A. Donnelly.—p. 705.
Perforated Gastric Malignancy. F. F. Boyce.—p. 718.
Treatment of Uterine Prolapse and Herniations into Vaginal Vault by "Composite" Procedure. R. C. Austin.—p. 725.
Combined Abdominothoracic Approach for Carcinoma of Cardia and Lower Esophagus. J. H. Garlock.—p. 737.
Problem of Stress Incontinence and Its Surgical Relief. W. E. Studdiford.—p. 742.
Two Hundred and Five Cases of Cancer of Breast Treated by Radical Mastectomy. P. S. Putzki and J. H. Scully.—p. 751.
*Reconstruction of Bony Defects of Face, with Special Reference to Cancellous Iliac Bone. D. W. Macomber.—p. 761.
Combined Jaw Resection Neck Dissection for Metastatic Carcinoma of Cervical Lymph Nodes Secondarily Involving Mandible. E. D. Sugarbaker and J. Gilford.—p. 767.
Managementof Placenta Previa at Chicago Lying-In Hospital: Review of 325 Cases During 1931 to 1945. M. E. Davis and Alice Campbell.—p. 777.
*Causalgia: Study of 75 Cases. J. L. Ulmer and F. H. Mayfield.—p. 789.
*Treatment of Painful Spondylolisthesis. J. Puig Guri.—p. 797.
Functional Restoration of Thumb: Pollicization of Index. H. Kelikian and E. W. Bintcliffe.—p. 807.

Primary Retroperitoneal Tumors.—Donnelly directs attention to the primary retroperitoneal tumors, which are believed to originate from remnants of the urogenital fold. The tumors occur twice as often in men as in women. They are predominantly malignant, sarcoma being the most common type. The symptoms in the early stages are vague and are primarily gastrointestinal in nature. As the mass increases in size the symptoms are those resulting from pressure on adjacent organs. The diagnosis is made by exclusion. Retrograde pyelography showing characteristic findings of ureteral displacement and gastrointestinal x-ray series for excluding tumors of the gastrointestinal tract are the most valuable diagnostic aids. The treatment of choice is operative intervention with as wide excision of the tumor as possible.

Reconstruction of Bony Defects of Face.—Macomber gives a general survey of the problem of restoring facial bones functionally and of correcting contour defects cosmetically. On the basis of personal experience in a large number of cases he says that results from foreign substances have been consistently bad and that the use of all such substances should be abandoned. Homogenous preserved cartilage has its useful place, particularly in replacing lost ear cartilage. Fat is practically useless except as a local attached subcutaneous pedicle for small depressions. Fascia lata is sometimes preferable for shallow depressions and probably serves more safely and dependably than deepithelialized skin. Iliac cancellous bone is a singularly dependable, utilitarian, safe, and satisfactory tissue for correction of defects.

Causalgia.—Ulmer and Mayfield present data on 75 patients with causalgia. They employed surgical procedures on 72 of their patients. The sympathectomy must be complete. With lesions involving the upper portion of the sciatic nerve removal of the sympathetic chain as high as the eleventh dorsal ganglion may be required. For lesions of the upper extremity preganglionic operation is adequate. Procaine block of the appropriate chain is a necessary diagnostic procedure, but as a therapeutic agent it has not been effective. Resection of the injured segment of nerve will provide relief. Neurolysis and periarterial sympathectomy are ineffective. Sympathectomy should be done as soon as the diagnosis is established to prevent the psychic trauma of prolonged pain and crippling joint stiffness. Causalgia has been noted only with incomplete nerve lesions. Recovery of function is often rapid after relief of pain. Consequently, primary neurorrhaphy is rarely indicated.

Treatment of Painful Spondylolisthesis.—At the University of Iowa the surgical treatment of painful spondylolisthesis consisted in the use of the Hibbs technic or a combination of the technics of Albee and Hibbs as described by Steindler. They are used only when there is assurance that the results will be superior to those of conservative treatment. Puig Guri reviews the end results of 60 cases after a long term follow-up. Complete relief was obtained in 41.1 per cent of the patients treated conservatively and in 69.2 per cent of the cases treated with spinal fusion. No progression of the deformity was observed after the treatment by means of braces or posterior spinal fusion. Surgical procedures that endanger the life of the patient are not justified. The presence of a sciatic pain together with local spinal symptoms does not necessarily mean that permanent relief cannot be obtained unless the disk is removed or curetted. In 55.5 per cent of the cases presenting such a clinical picture, complete relief was obtained either by conservative means or after the fusion of the posterior spine. In advanced cases of spondylolisthesis the spontaneous fusion of the anterior spine after destruction of the intervertebral disk did not constantly produce complete relief of the symptoms. On the other hand, following the application of a spinal support or the surgical fusion of the posterior spine, all the symptoms disappeared.

Texas State Journal of Medicine, Fort Worth

42:457-512 (Dec.) 1946

Hypertension: Some Uses and Abuses of Thiocyanates. M. H. Barker. —p. 462.
Posthypoglycemic Encephalopathy. G. M. Jones.—p. 466.
Sympathectomy for Certain Forms of Peripheral Vascular Disease. T. B. Aycock and J. W. Hendrick.—p. 468.
Intravascular Clotting in Relation to Postoperative Pulmonary Embolism. R. M. Moore.—p. 474.
*Vascular Injuries, Particularly Complications Influencing the Incidence of Gangrene. C. E. Thomas Jr. and J. E. Pittman.—p. 478.
Anesthesia for Cesarean Section. C. R. Allen and H. C. Slocum. —p. 482.
*Intracranial Air Studies in Infants and Children. M. Schneider. —p. 485.
Herpes Zoster. R. J. Reeves and L. B. Waters.—p. 490.
Comparison of Two Cholecystographic Media. C. A. Stevenson and R. N. Smith Jr.—p. 492.
Cancer of Larynx, Its Diagnosis and Treatment. C. C. Cody Jr. —p. 495.

Vascular Injuries.—Thomas and Pittman review observations in 28 cases of injuries to the major arteries seen in the European Theater of Operations. Twelve cases of sudden interruption of the superficial femoral artery or its ligation for traumatic aneurysm resulted in gangrene only if the profunda femoris area was badly damaged. Gangrene occurred in 6 of these cases, but in 5 of the 6 cases there was an associated comminuted fracture of the femur. In 7 cases without fracture gangrene occurred only once. Six cases of sudden popliteal artery division resulted in gangrene, as did also the only case of common femoral artery division. Two cases of ligation of the axillary artery did not result in gangrene. Ligation of the posterior tibial artery was tolerated well. Lumbar sympathetic block may have influenced the level of gangrene in the lower extremity, but in no instance did it seem to influence the occurrence of gangrene. Of the 9 traumatic aneurysms of large vessels 8 were arterial and only 1 was arteriovenous.

Intracranial Pneumograms.—Schneider thinks that intracranial pneumography is a relatively safe and accurate means of diagnosing and localizing intracranial lesions, provided the procedure is in competent hands with due precaution against the recognized dangers. In children it may be of particular value in view of the often unsatisfactory histories and even examinations. Illustrative cases are presented.

United States Naval Med. Bulletin, Washington, D. C.

46:1783-1956 (Dec.) 1946

*Operation Everest: Study of Acclimatization to Anoxia. C. S. Houston. —p. 1783.
Rheumatic Fever: Statistical Analysis of Incidence During Sulfadiazine Prophylaxis. M. J. H. Grand, J. B. Stanbury, E. W. Ekermeyer and J. D. Purvis Jr.—p. 1793.
*Subdiaphragmatic Abscess. H. D. Adams.—p. 1802.
Weil's Disease: Report of 11 Cases. L. H. Bounds and R. M. Kingery. —p. 1808.
Neuropsychiatric Problems on a Battleship. L. E. Hinkle Jr.—p. 1813.
Wartime Log of United States Navy Hospital Ship to 30 June 1943: Part II. R. A. Kern and M. J. Aston.—p. 1823.
Charcot-like Joints in Yaws. F. H. Smith.—p. 1832.
Guillotine Amputation Modified to Preserve Skin Flaps. N. C. Meyer. —p. 1844.
How Shall We Evacuate the Casualties? O. B. Morrison Jr. and R. Mazet Jr.—p. 1848.
Abnormal Vascular Spasms—Additional Etiologic and Therapeutic Concept. Preliminary Report. W. A. Simunich and L. J. Bristow Jr. —p. 1853.
Industrial Dentistry at New York Naval Shipyard. J. M. Dunning. —p. 1857.
Dystrophia Myotonica (Myotonia Atrophica), with Report of Case. L. D. Boshes, W. S. Terry and R. Jessup.—p. 1865.
Determination of Penicillin Sensitivity of Bacteria. H. M. Elwyn. —p. 1879.
Gangrenous Appendices Epiploicae: Report of 2 Cases. H. R. Ives. —p. 1889.

Acclimatization to Anoxia.—Since mountain expeditions are handicapped by difficult terrain, adverse climatic and living conditions and inadequate laboratory facilities, a low pressure chamber was used in this study. Ascent was made at the rate of 2,000 feet a day to 9,000 feet, at 1,000 feet a day to 15,000 feet and at 500 feet a day thereafter. Usually the ascent was made gradually during a two hour period in the evening. None of the subjects were seriously affected by altitude below 20,000 feet, and at no time was the clinical picture of "mountain sickness" observed. All 4 noted a gradual decline in appetite, reflected not only in reduced caloric intake but also in an average weight loss of 6 pounds during the last two weeks of the study. Cyanosis increased during work. Dyspnea on exertion was the chief complaint. The 4 subjects did not acclimatize to altitude either as completely or as rapidly as do mountaineers. The reason for this is not clear but may be attributed to the confined quarters, which made sustained and strenuous exertion impossible.

Subdiaphragmatic Abscess.—Adams suggests that in gastrointestinal, acute biliary and traumatic surgery the serious complication of subdiaphragmatic abscess may be eliminated by careful walling off of the area, by complete aspiration with suction of all contents spilled into the peritoneum and from over the dome of the liver, by instillation of penicillin into these areas at the close of the operations and by an adequate course of penicillin and sulfadiazine postoperatively.

West Virginia Medical Journal, Charleston

42:299-332 (Dec.) 1946

Some Common Precanceroses of Skin. C. S. Duncan.—p. 299.
Present Status of Thoracic Surgery. R. Adams.—p. 302.
Gastrointestinal Obstruction. R. S. McGinnis.—p. 306.
Physical Rehabilitation in Civilian Practice. F. H. Krusen.—p. 313.
Attempt to Establish a Medical College in Wheeling in 1831. F. C. Waite.—p. 316.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Journal of Physiology, Cambridge

105:197-298 (Dec.) 1946. **Partial Index**

Metabolism of Kidney Slices from Newborn and Mature Animals. Margery Cutting and R. A. McCance.—p. 205.
Relation Between Illumination and Extent of Visual Field. F. W. Sharpley.—p. 215.
Urea Excretion by Rabbits. E. M. V. Williams.—p. 223.
Action of Adrenaline on Blood Vessels in Human Skeletal Muscle. W. J. Allen, H. Barcroft and O. G. Edholm.—p. 255.
Experimental Production of Watery Vacuolation of Liver. O. A. Trowell.—p. 268.

Journal of Tropical Medicine and Hygiene, London

49:103-123 (Dec.) 1946

Nutrition, Environment and Physical Fitness: Study of Indian Soldiers in Burma. R. Kark, J. Doupe, H. F. Aiton and E. D. Pease.—p. 103.
*The Heart in Severe Anemia. M. Gelfand.—p. 108.
Penicillin in Treatment of Tropical Pyomyositis. K. V. Earle.—p. 111.
Cephalin-Cholesterol Flocculation Test in Kala-Azar. J. G. Makari.—p. 113.
*Effect of Penicillin on Vaccinia Virus. M. A. Gohar and A. Bashatli.—p. 115.

The Heart in Severe Anemia.—Gelfand says that in Europeans heart failure due to anemia is not frequent because they usually seek medical aid relatively yearly, so that the anemia is usually corrected before the heart begins to fail. Africans frequently do not receive medical attention until the anemia is quite severe. When admitted to the hospital their hemoglobin may be as low as 10 or 20 per cent. Among 42 cases of heart disease which the author treated in a native hospital there were 7 with congestive heart failure due to anemia. Moribund patients are often admitted for whom little hope can be entertained. However, even when the anemia is severe and the symptoms are distressing recovery often follows with the correct treatment. To the severely ill a transfusion of 500 cc. of blood should be administered slowly. The patient is given ½ pound of raw or slightly cooked liver a day, together with iron tablets by mouth. Yeast also is administered. Some patients have been given three or four blood transfusions. The cardiac condition requires rest with the patient semirecumbent.

Effect of Penicillin on Vaccinia Virus.—Suspecting that the use of glycerin with vaccine lymph may be responsible for some anomalous results, Gohar and Bashatli thought that in the purification of the lymph advantage might be taken of the resistance of viruses and sensitiveness of cocci and other gram positive organisms to penicillin. They found, however, that glycerin is superior to penicillin in the purification of vaccine lymph. Penicillin seems to be capable of inactivating the vaccinia virus. When it is injected into rabbits within twenty-four hours after inoculation with a rabbit-passed vaccinia virus, the typical lesions of vaccinia fail to develop. The authors suggest that penicillin be tried in the treatment of variola.

Thorax, London

1:211-274 (Dec.) 1946

*Extrapleural Pneumothorax in Treatment of Pulmonary Tuberculosis. H. Reid.—p. 211.
Esophagojejunostomy for Irremovable Carcinoma of Cardia. P. R. Allison.—p. 239.
Superior Vena Caval Obstruction Due to Chronic Mediastinitis. O. S. Tubbs.—p. 247.
Thrombosis of Superior Vena Cava. E. T. Renbourn.—p. 257.
*Atelectasis as Complication of Pulmonary Lobectomy. I. R. Gray.—p. 263.

Extrapleural Pneumothorax in Pulmonary Tuberculosis.—Reid reports 54 cases of pulmonary tuberculosis with extrapleural pneumothorax performed during the period of 1938 to 1944. Eleven of the 54 patients developed tuberculous infection, and 4 developed infection due to other bacteria in the extrapleural space. Thirty-seven patients left the sanatorium with sputum conversion. Eight patients died, 1 directly as the result of operation, 4 because of the spread of the disease soon after operation and 3 because of the remote spread of the disease after four years. Eleven of 17 patients traced over four years obliterated their extrapleural space. The remaining 6 with persisting spaces did well clinically. These results suggest not only that extrapleural pneumothorax may be a life saving measure to tide the patient over and make him safe for a thoracoplasty, but that, as a preliminary to thoracoplasty, avoiding the risk of bronchogenic dissemination, extrapleural cutaneous fistulas and shock, extrapleural pneumothorax is consistent with good general condition, working capacity and freedom from cough and sputum even after a lapse of four years.

Atelectasis Complicating Pulmonary Lobectomy.—Postoperative atelectasis occurred in 23 of 90 cases of suppurative disease in an unselected series of 106 pulmonary lobectomies which were analyzed by Gray. There was not one postoperative atelectasis in the remaining 16 cases in which lobectomy was performed for nonsuppurative condition. Twenty-two of the 23 cases of atelectasis were of one of the remaining lobes on the side of the operation and there was 1 case of contralateral atelectasis of the lower lobe. Three of the 23 cases of atelectasis became permanent. The presence of pleural adhesions at the time of operation was associated with a considerably reduced incidence of postoperative atelectasis. The incidence of atelectasis was increased when more than one lobe had been removed. Examination according to age revealed that in children the likelihood of atelectasis was twice as great as in adults. Cases in which the amount of sputum produced daily was more than 1 ounce had a higher rate of atelectasis than those with less. The sex of the patient, the season of the year and the duration of pleural drainage had no influence on the occurrence of atelectasis. Artificial production of adhesions with silver nitrate, iodized talc or kaolin, preoperative breathing exercises and postural drainage are recommended for preoperative prophylaxis of atelectasis. Treatment of atelectasis consists in tracheal intubation under local anesthesia with suction by means of a fine catheter; if no benefit results, early bronchoscopy is suggested.

Archives des Maladies de l'Appareil Digestif, Paris

35:189-272 (June-July) 1946

Accentuation of Anomalies of Profile and of Projection of Mucosa of Stomach Due to Hypertonia of Muscular Mucosa During Morphine Pharmacoroentgenography, with Reference to Purely Mucosal Epithelioma in Situ. G. Albot, R. Le Canuet and A. Pouey.—p. 189.
*Cancer of Rectum and Contact Roentgenotherapy. C. M. Gros.—p. 201.
Study of Intragastric Temperature and of Its Modifying Factors. M. J. Mašek.—p. 215.

Cancer of Rectum and Contact Roentgenotherapy.—Gros reports 70 inoperable cases of cancer of the rectum in patients admitted to the cancer center in Montpellier, France, during the period of January 1944 to January 1946. Contact roentgenotherapy with a total dose of 9,000 to 60,000 was applied to 28 of these patients with cylindricoepithelioma. Death resulted from hemorrhage in 2 and recurrences took place in 2. Sixteen are alive in whom local control examination has not been performed. An apparent cure is suggested in 8 patients by the satisfactory general condition, by their freedom from pain and by negative biopsies; the rectal wall in 4 of these patients does not present any fibrous cicatrization. It is still too early to compare the surgical indications with those of contact roentgenotherapy.

Bull. de l'Office Internat. d'Hygiène Publique, Paris

38:177-400 (April-May-June) 1946. **Partial Index**

Exanthematic Typhus in Tunisia from 1939 to 1946. Director for Assistance and Public Health.—p. 253.
*Note on Localized Epidemics of Exanthematic Typhus Amongst Prisoners of War in France. Professor Lemierre.—p. 259.
Research on Weil-Felix Reaction and Specific Agglutination of Rickettsias in Patients Suffering from Exanthematic Typhus. E. Hammarström, J. Fahraeus and M. D. H. Hellsten.—p. 270.

Localized Typhus Epidemics Among Prisoners of War in France.—After an epidemic of 97 cases in February 1945 and 318 cases observed between April and July, exanthematous typhus disappeared from France in August and September. It reappeared in October and November among German prisoners of war. The dominating feature was the almost simultaneous appearance of typhus in the Bordeaux area and in Marseilles, without recent influx of infected persons. It would therefore appear to constitute a local reappearance of the disease among persons in a state of low resistance. This suggests that similar manifestations in other parts of the country must be anticipated.

Schweizerische medizinische Wochenschrift, Basel

76:983-1006 (Sept. 28) 1946

Ulcerating Mercurial Stomatitis and Necrosis of Jaw Following Use of Mercurial Diuretics (Salyrgan, Esidron). E. K. Oppikofer and H. Fehrenbach.—p. 983.
*Thresher's Disease. W. Hoffmann.—p. 988.
*Rural Service and "Shoveler's Disease" (Avulsion of Spinal Processes). E. Wetzel.—p. 990.
Rupture of Sac of Umbilical Hernia with Prolapse of Intestines. W. Hunziker.—p. 991.
Microscopic Studies on Blood Parasites with Special Consideration of New Thedan Blue Methods. H. C. R. Simons.—p. 992.
Diet Lacking in Roughage as Cause of Hypophyseal Cachexia. H. Salomon.—p. 994.

Thresher's Disease.—Hoffmann describes a disorder which developed in persons who had inhaled dust while working at threshing machines. The threshing had been done in rather confined sheds, and the grain in question had been harvested while damp and had become gray. The patients had fever for from one to five days, cough, severe sweating, headaches, a feeling of extreme weakness and unsteadiness when attempting to stand or walk. The examination of barley that had caused several cases of thresher's disease revealed a fungus that has been known to produce a condition characterized by a dizzy swaying. It is assumed that thresher's disease is likewise caused by fungi. Threshing in the open air or devices for the suctioning off of dust might help to prevent attacks of thresher's disease.

Shoveler's Disease.—Wetzel directs attention to the occurrence of avulsions of the spinal processes in the course of exertions, such as pitching in farm work, by persons who are unaccustomed to hard physical labor. To illustrate this so-called shoveler's disease he presents the case of a youth, aged 18, a copper-engraver by trade, in whom avulsion of a spinal process venth cervical) took place while he was engaged in farm rk. His complaint was pain between the shoulder blades. ere was sensitivity to pressure in this region, and forward d sideward lifting of the arms caused pains. Such patients uld refrain from the exertion that caused the avulsion for out four weeks.

Brasil Med.-Cir., Rio de Janeiro

8:1-42 (Feb.) 1946. Partial Index

nlargement of Operative Field of Vision in Intra-Abdominal Surgery. L. E. Cardoso.—p. 1.

Visibility of Operative Field in Intra-Abdominal perations.—Cardoso reports increased visibility of operative ld in 67 patients who had intra-abdominal operations after an raperitoneal injection of 20 cc. of venous blood. The best sults were obtained when the injection was administered by following technic: twenty-four hours before the operation patient is given a purgative dose of castor oil or a saline thartic; twelve hours later 20 cc. of the patient's blood is thdrawn from a vein and is slowly injected in the midabdomil line intraperitoneally. This is followed by expulsion of gases d feces and consequent intestinal collapse which lasts for ten fifteen hours, during which period the visibility of the intradominal exposure is much enlarged. The injection is harmless d the blood is reabsorbed within twenty-four hours.

Oftalmologicheskiy Zhurnal, Odessa

2:1-48, 1946. Partial Index

Elastonometric Investigation in Hypertensive Disease. M. E. Kashuk.—p. 9.
Case of Pulsating Traumatic Enophthalmos. S. F. Kalfa.—p. 15.
Corneal Transplantation in Complicated Pannus Following Military Trauma. T. G. Ershkovich.—p. 18.
*Tissue Therapy of Retinitis Pigmentosa. A. Yu. Lipkina.—p. 29.

Tissue Therapy of Retinitis Pigmentosa.—Lipkina reports 16 severe cases of retinitis pigmentosa treated by injections of 0.5 cc. of conserved, autoclaved leaves of aloe and 14 cases in which this treatment was combined with implantations of conserved cadaver skin. With 1 exception, all the patients showed considerable improvement in all of the ocular functions.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

90:1359-1422 (Oct. 12) 1946

Heparin and Dicoumarol Therapy in Thrombosis. G. I. van der Zwaag.—p. 1360.
*Endarteritis Obliterans in the Netherlands East Indies: Treatment by Extirpation of Lumbar Sympathetic. L. W. van Ouwerkerk.—p. 1362.
Ten Years' Observation on Effect of House Spraying with Pyrethrum Solutions in Campaign Against Malaria. N. H. Swellengrebel and H. Kraan.—p. 1377.
Case of Echinococcus in Abdomen. D. L. Hulst.—p. 1381.
New Points of View on Retropubic Prostatectomy According to Millin. F. H. van Gulik.—p. 1384.

Extirpation of Lumbar Sympathetic in Endarteritis Obliterans.—Van Ouwerkerk comments on the frequency of endarteritis obliterans in Indonesia. The patients he observed often had a high and delayed blood sugar curve necessitating dietetic and even insulin treatment. Extirpation of the lower 12 to 15 cm. from the lumbar sympathetic through a gridiron incision proved to be a successful treatment. Results of this operation seem to equal those of more mutilating ones.

Acta Medica Scandinavica, Stockholm

125:395-504 (Sept. 20) 1946. Partial Index

Addison's Disease: II. Biochemical Investigations. O. J. Broch.—p. 395.
Infections of Urinary Tract: III. Pharmacology of Mandelic Acid. L. Loopuyt.—p. 409.
*Cholesterol Content of Human Aorta in Relation to Serum Cholesterol Concentration. M. Faber.—p. 418.
Pulmonary Alterations in Tuberous Sclerosis. G. Berg and A. Nordenskjöld.—p. 428.
Hemolytic Anemias with Increased Osmotic Resistance of Erythrocytes. F. Rietti.—p. 451.
Five Cases with Pre-Excitation Electrocardiograms. G. Biörck.—p. 465.
Transfusions of Blood Rich in Ionized Gaseous Elements. A. Bécart and L. Langlais.—p. 475.
Phosphorus Compounds Easily Hydrolysable in Acid Occurring in Human Blood in Various Diseases. S. G. Jokipii.—p. 481.

Cholesterol Content of Human Aorta.—Faber determined the cholesterol content of the aorta of 29 normal persons between the ages of 18 and 73 and compared it with the concentration of cholesterol in the blood serum. The increasing amount of cholesterol found in the aorta in the higher age groups was independent of the serum cholesterol concentration. The cholesterol content of the aorta of 19 patients with coronary occlusion between the ages of 32 and 78 and of 17 patients with hypertension and early atheromatosis between the ages of 49 and 65 was determined. In contrast to the normal persons, a number of younger patients showed an increase in the cholesterol content of the aorta above the value found in much higher age groups. This increase resulted from an increase in the concentration of cholesterol in the blood serum above the normal in cases of xanthomatosis with persistent hypercholesterolemia. In hypertension the same increase in the cholesterol content of the aorta was found in the absence of hypercholesterolemia. It is suggested that hypertension induces a change in the wall of the vessel with a higher affinity for cholesterol and with greater deposits.

Acta Pathol. & Microbiol. Scandinav., Copenhagen

23:1-106 (No. 1) 1946. Partial Index

Genesis of Osteitis Fibrosa Generalisata (Engel-Recklinghausen Disease). A. Wilton.—p. 1.
*Histology of Asbestosis. L. Noro.—p. 53.
Studies on Bacteriophage of Various Strengths with Special Regard to Its Effect on B. Coli in Transmigration Culture. G. Fischer.—p. 60.

Asbestosis.—Two workers in an asbestos factory died under circumstances which indicated that the cause of death was their trade. When the workers of this factory were examined roentgenologically asbestosis was found in 65 per cent of the 167 workers examined. The microscopic picture of asbestosis is characterized by a reaction caused by the needles in the tissue, which becomes manifest in exudate cell infiltration, accompanied by numerous giant cells containing foreign particles and an increase of interstitial connective tissue and fibrosis. Noro is inclined to think that in the pathogenesis of asbestosis the mechanical factors are the most important, although the chemical factors may have some significance in a later phase.

Book Notices

A Textbook of Biochemistry. By Philip H. Mitchell, Ph.D., Robert P. Brown Professor of Biology, Brown University, Providence, R. I. Cloth. Price, $5. Pp. 640, with 84 illustrations. McGraw-Hill Book Company, Inc., 330 W. 42d St., New York 18, 1946.

This book is excellent for the choice and presentation of subject matter, for the simplicity and fluency of language and for the lucidity of style. It is a very readable textbook. The author has succeeded admirably in embodying the newer knowledge of biologic chemistry without sacrificing and pushing to the background the older knowledge that still remains basic and fundamental. He is abreast of the times in fact and in theory. Even the most recent knowledge of antibiotics receives a chapter. As a rule the smaller textbooks in biochemistry suffer from the fact that the subject matter is either insufficiently treated or that it is so condensed as to omit important points needed for full comprehension of the topic in discussion. Such gaps in subject matter are happily absent. Small textbooks also suffer from the fact that difficult topics are handled inadequately so that the student loses the full significance of important biochemical concepts. In this book hydrogen ion concentration, acid and base regulation, the chemistry of respiration, biologic oxidations and redox potential are presented in a satisfying, clear and illuminating manner. One senses that the author is a master not only of his subject but also of pedagogy. He brings a fresh and vigorous point of view to his subject. Throughout the physiologic angle is emphasized. Descriptive matter is therefore at a minimum and presented only as far as it is necessary to comprehend the dynamics of the biologic organism. Major space is allotted to function. The author is dominated by the belief that the real chemistry of life lies in an explanation of metabolism. He presents his subject not as a still picture but as an ever changing motion picture. The activity of enzymes, vitamins and hormones and the intermediate reactions of metabolism, both in its anabolic phase and in its catabolic phase, consequently receive ample stress. The interconversion of foodstuffs in metabolism is studied as the groundwork for adequacy and balance in diet. Enzymes, vitamins and intermediate metabolism of lipids, carbohydrates and proteins are all linked in the process of supplying proper nutrition to the biologic organism.

The author occasionally steps out of the role of a formal textbook writer and assumes the role of dramatizer. This role adds interest to the book. Here is an example of vivifying scientific fact by dramatization:

> Bio-oxidation is the subtitle of the drama of life. It is the central theme of every physiological story. It is characteristic and cannot be closely imitated in nonliving systems. It is one process which must go on if life is sustained and its failure is the infallible sign of death.
>
> In spite of all that is known about bio-oxidation, it is a drama of which the plot is still unsolved. The biochemist is a stagehand. His position in the wings has enabled him to get acquainted with some of the actors (enzymes), to see the properties (foodstuffs) going on the stage, to catch snatches of conversation and hear stage effects (activity of certain enzymes) during the play, and to know that the play goes to a successful conclusion (growth, maintenance, production, of heat and work, excretion of H_2O, CO_2 and other waste products) unless there are missing (malnutrition) some of the stage properties or unless hoodlums (invading organisms) interfere. But how the plot works out he does not know. One guess is worth considering as a tentative explanation of a part of the problem. It is fairly apparent that cellular enzymes are not generally in haphazard positions but are definitely oriented in protoplasmic organization, as are the members of a chorus or a ballet on the stage, so that they can perform as a unit. This guess is based partly on the orderly sequence of oxidation-reduction reactions proceeding as a unit, although involving many enzymes, and partly on the well known effects of injury. Slight mechanical injuries may depress the oxidation in a cell and severe ones abolish it. Incidentally, the converse is also true. Depressed oxidation, as in oxygen deprivation, causes cytological disorganization, reversible in early stages but eventually fatal. Pursuing the allegory a little further, the cell is not only the stage but is the training school, producing the actors, and the shop, producing the stage setting. The cell synthesizes its enzymes and its protoplasmic materials.

The book is designed as a first course in biochemistry. It may well be read by the advanced student for the uniqueness of presentation and for its refreshing points of view. To the physician and to the advanced medical student the book offers a refresher course and an easy road to the newer knowledge of biologic chemistry.

Insight and Personality Adjustment: A Study of the Psychological Effects of War. By Therese Benedek, M.D. Cloth. Price, $4. Pp. 307. Ronald Press Company, 15 E. 26th St., New York 10, 1946.

Dr. Benedek in this book attempts to present, against a backdrop of war and peace, the basic dynamisms of human relationships. Her thesis is divided into four parts. Part I, on the individual, outlines, in conformity with the orthodox freudian doctrine, the mechanisms of personality growth, maturation and psychosexual development. Part II, on the soldier, deals with the influences of the sudden and deep-going change in the personality brought about by army life: the stresses of induction, acclimatization and demobilization. Part III, on the family in war, is the major essay, 140 pages devoted to such divers subjects as the relationship which exist between sons (soldiers) and their mothers, fathers, siblings, wives and children; mourning for the soldier and the disabled veteran. Part IV, on men, women: the changing sexual mores, is a critique of sexual behavior which highlights the social and sexual problems of femininity in recent years.

It is difficult to avoid the impression that Dr. Benedek's exposition is not categorical and deductively reasoned from a priori theory. Her "soldiers" of World War II were some fourteen million single, married, widowed and divorced, young, middle-aged and old individuals. They were enlisted and inducted from every walk of civilian life. Their economic, social, educational and psychologic status ranged over many cultural and subcultural spectra. In the light of this, in writing of their war born emotional vicissitudes, one cannot validly create an amorphous stereotype and by rhetorical extrapolation give a scientific account of its psychosocial life.

Any single investigator's data would be too few to permit drawing first hand conclusions of the problems of adjustment of a generation, let alone an explanation of the responsible operative dynamics of a culture in flux. The psychologic problems in the phenomena of war and peace are worthy of a more scientific study.

Lehrbuch der Geburtshilfe und Gynäkologie. Herausgegeben von E. Anderes, H. Guggisberg, und Th. Koller. Band I: Lehrbuch der Gynäkologie. Bearbeitet von Prof. Dr. H. Guggisberg, Prof. Dr. E. Hintzsche, Prof. Dr. F. Ludwig, P.D. Dr. C. Müller, und Prof. Dr. W. Neuweiler. Herausgegeben von Prof. Dr. Hans Guggisberg, Direktor der Universitäts-Frauenklinik, Bern. Cloth. Price, 72 Swiss francs. Pp. 717, with 354 illustrations. S. Karger, Holbeinstrasse 22, Basel; 215 Fourth Ave., New York 3, 1946.

Regarding this excellent and most comprehensive work on gynecology, the foreword furnishes interesting information. The directors of the women's clinics of the Universities of Basel, Bern and Zurich determined to compile and issue a new work on gynecology and obstetrics in the German language. This textbook of gynecology represents the first of three volumes comprising this work, the second to be a textbook of obstetrics and the third a textbook of obstetric operations.

Hans Guggisberg of Bern has served as editor and chief author of this volume on gynecology and has sought and directed most capably the assistance and collaboration of a number of his associates, each of whom was chosen for his own special knowledge of subjects constituting various sections of this first volume.

When the other two volumes appear, to be treated similarly under the direction of E. Anderes of Zurich and T. Koller of Basel with the help of colleagues, we shall have an authoritative and representative exposition of gynecology and obstetrics as practiced in Switzerland. It is perhaps to be regretted that volume III is not planned as a work on gynecologic as well as obstetric operations. Gynecologic operative procedures are not discussed in the volume now being reviewed. Such a gap leaves one with the feeling that the work will be seriously incomplete, whereas it would be logical to include operative gynecology in volume III instead of leaving this to deal with operative obstetrics alone.

This first volume is well printed and in excellent style, and the illustrations are superb, particularly the reproductions of color photographs. American readers will take exception to drawings showing pelvic examinations and various other procedures being carried out with ungloved hands, and this is inexcusable. However, the technical points being thus illustrated are capably shown. There are, in fact, other items with which our views are not in accord, such as the use of seaweed or similar tents (laminarstifte) for dilation of the cervix; but such criticism is merely faultfinding in view of the general excellence of the book.

The subject matter of gynecology is thoroughly covered from the fundamentals of physiology, anatomy and histology to major pathologic conditions and includes a good section on sterility.

The entire work should be of greatest value to German speaking people particularly since the almost complete cessation of similar works in Germany due to the war. Elsewhere it will be found useful not only as representative of the Swiss point of view but also as an extensive work on gynecology, well written, well edited and well published.

Le fibro-myome utérin: Statistiques, critiques et commentaires sur *une série personnelle de 1,300 cas dont 547 inédits. Fibromatose expérimentale, physiologie de l'ovaire irradié.* Par J. Ducuing, professeur de clinique chirurgicale à la Faculté de médecine de Toulouse. Paper Price, 735 francs. Pp. 537 with 156 illustrations. Masson & Cie, 120 Boulevard Saint-Germain, Paris, 6^e, 1946.

This book is based not only on a review of the literature on uterine fibromyomas but also on the author's extensive clinical experience with 1,300 cases and on his experimental work. The author is both a surgeon and a radiotherapist, so that he is able to evaluate properly the merits and disadvantages of surgery and radiotherapy in the treatment of uterine fibromyomas.

In the first few chapters the author analyzes his personal cases. In succeeding chapters he discusses the composition of uterine fibromyomas, including the fibrous elements, the muscle tissue, the endometrium associated with fibromyomas, the blood supply, the condition of the ovaries in the presence of these tumors, the physiology of the uterine cycle, ovulation, the mechanism of abnormal bleeding in cases of fibromyomas, the clinical forms of these neoplasms, diagnostic aids, errors in diagnosis and the indications and contraindications for treatment; medical, surgical, radiation and endocrine therapy; the results of treatment, complications, mortality and morbidity and finally the author's evaluation of radiotherapy for fibromyomas. In the discussion on treatment the author takes up surgical operation versus x-ray treatment versus radiation therapy, and in dealing with operative intervention he discusses myomectomy, abdominal total and supravaginal hysterectomy, vaginal hysterectomy and retention or removal of the ovaries. In addition the vast literature on the subject of uterine fibromyomas is reviewed. Hence the work is in reality an extensive reference work on the subject. It is well written, easy to read, abundantly and beautifully illustrated and printed on excellent paper. The book should be in the library of every one interested in the subject of uterine fibromyomas. Gynecologists, surgeons, radiation therapists and endocrinologists should possess a copy of this book.

Laboratory Instructions in Biochemistry. By Israel S Kleiner, Ph.D , Professor of Biochemistry, New York Medical College, Flower and Fifth Avenue Hospitals, New York, and Louis B. Dotti, Ph.D., Chemist, St Luke's Hospital, New York. Second edition. Loose-leaf. Paper. Price, $2.50. Pp. 245, with 8 illustrations. C. V. Mosby Company, 3207 Washington Blvd , St. Louis 3, 1946.

This laboratory manual in biochemistry includes chapters on physical chemistry, carbohydrates, lipids, proteins, tissues, milk, digestion and qualitative and quantitative analysis of blood and urine. In addition there is a chapter on toxicology dealing with qualitative tests on methyl alcohol, phenol, cyanide, strychnine and other poisons in tissues. There are many of the newer analytic methods for blood and urine analysis and many modifications of fundamental experiments. Some quantitative work on cerebrospinal fluid is included and also an excellent section on reagents and solutions. The chapter on food analysis included in the first edition was omitted. This manual is written primarily for the medical student who has to apply basic principles in biochemistry to the practice of medicine. The experimental procedures are excellently described, but there is inadequate discussion of principles involved, and no structural formulas are used. The volume can be used satisfactorily for students in biochemistry in medical and dental schools.

Psychotherapy in General Medicine: Report of an Experimental Postgraduate Course. By Geddes Smith. Paper. Price, 25 cents; free to *medical schools, medical societies and public agencies.* Pp. 38. Commonwealth Fund, 41 E. 57th St., New York 22, 1946.

This is a brief yet comprehensive account of a two weeks postgraduate course in psychotherapeutic medicine. The Commonwealth Fund and the University of Minnesota during April 1946 sponsored this training for twenty-five selected physicians who represented the practice of medicine under varying conditions in mid-Western communities of assorted size. It was the consensus that the overall purpose was accomplished: to sensitize doctors to emotional problems in their medical practice.

The art of medicine, which assays and treats the whole man as an integrated unit, was the motif in the plan of the course. The teaching technics used included didactic lectures, seminar discussions and, most important, first hand clinical experience with the actual care of patients. The best teaching was done in the smaller section meetings, which stressed the clinical significance of the individual case. The general and special medical clinics of the university hospital furnished the kind of patient material with which every general practitioner is familiar; cases of long-standing distress—patients with the psychosomatic symptoms so typically representative of the persistently unwell. The major portion of the report describes in a diary fashion the manner in which the course evolved; among other lessons it was learned that flexibility is the sine qua non of medical pedagogy. In some instances predetermined methods had to be revised to fit the student physicians' needs more adequately. The gratifying result was that for the first time in their medical careers these physicians came to comprehend the meanings of dynamic psychiatry. Phenomena such as the doctor-patient relationship, the meaning of a psychoneurosis, the development of a normal personality, the dynamics of anxiety, the effect of emotions on physiologic functioning and the methodology of psychotherapy were analyzed vis à vis patient problems.

This report is an admirable protocol of an important experiment. It explicitly describes a brief training course in psychotherapeutic medicine and it implicitly points the way to better medical education for the nonspecialist.

L'epilessia sperimentale. *Di Giuseppe Moruzzi. I, Problemi di medicina sperimentale:* Raccolta di studi diretta da Giulio C. Pupilli. Paper. Price, 150 lire. Pp. 128, with 26 illustrations. Nicola Zanichelli, Piazza Galvani, Bologna, 1946.

The author, who has worked with Adrian in England, reviews his observations and those of others that deal with the oscillographic recordings of nerve impulses after faradic or strychnine stimulation of different portions of the central nervous system of animals. The book is illustrated by reproductions of tracings and is fortified by reference to more than four hundred articles, of which twenty-two are by the author. The presentation is in three parts: (*a*) general physiology, (*b*) special physiology and (*c*) the application of animal experiments to epilepsy in human beings. The author concludes that, because clinically and electroencephalographically the induced convulsions of animals resemble the spontaneous convulsions of patients, these experimental observations can be used to explain the neurophysiology and pathology of epilepsy. The monograph should be of interest to neurophysiologists.

Exercises in Electrocardiographic Interpretation. By Louis N. Katz, A.B , M.A., M D., Director of Cardiovascular Research, Michael Reese Hospital, Chicago Second edition. Cloth. Price, $6. Pp. 288, with 141 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1946

This edition differs from the first in that thirty-eight new cases have been substituted for old ones and the total number of cases has been raised from ninety to one hundred. The electrocardiograms are a representative group and in general are excellently reproduced. Descriptions of curves involve the use of many terms which are peculiar to the author and his associates. Correlations of electrocardiographic with clinical phenomena reveal more caution in making anatomic diagnoses from electrical data than is displayed in the author's companion volume "Electrocardiography." Correlations with necropsies are rare. The volume should be of use to the beginner.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

TREATMENT OF THYROTOXICOSIS IN PREGNANCY

To the Editor:—May thiouracil be used for thyrotoxicosis in or during *pregnancy?* If not, would iodine in the form of Lugol's solution be preferable and should thyroidectomy be planned to follow such giving of iodine? A woman aged 24, three months pregnant, has a basal metabolic rate of +30 and a pulse of 110 at rest. She is otherwise in good physical condition. Her fast pulse and nervous condition came on gradually before pregnancy but have become worse since pregnancy. Please discuss the treatment of thyrotoxicosis during pregnancy.

M.D., Minnesota.

ANSWER.—There is a difference of opinion concerning the use of thiouracil in the treatment of thyrotoxicosis during pregnancy. Some observers feel that it may injure the fetus and result in stillbirth, whereas others are of the opinion that it is just as safe to use the drug in women who are pregnant as in those who are not. There are not enough data at present to settle the question.

Thyroidectomy may be performed safely during pregnancy after adequate preoperative preparation. The danger of a miscarriage apparently is not greater following thyroidectomy.

The two questions that cannot be answered definitely at the present time are:

1. Is it safe to use thiouracil for preoperative preparation in pregnant women who have toxic goiters?
2. Is it safe to use thiouracil alone without operation in pregnant women who have toxic goiters?

There are many reasons for believing that toxic reactions from thiouracil are no greater in pregnant women than in nonpregnant women, but until there are enough data to answer this question definitely it is necessary to preserve an open mind.

TREATMENT OF CHRONIC CYSTIC MASTITIS

To the Editor:—Please discuss the treatment of chronic cystic mastitis.

M.D., West Virginia.

ANSWER.—The treatment of chronic cystic mastitis has become fairly well standardized, and little new can be added. A conservative regimen usually consists in wearing adequate uplift support for the affected breast. Thyroid in doses of ½ to 1 grain (32 to 65 mg.) daily has been helpful in some instances. The thyroid is supposed to aid in the elimination of water from the breast through normal channels. Administration of testosterone propionate has given variable results. Opinion has become solidified against the use of ovarian extracts or ovarian substitutes in large doses or continuously because of the doubtful relationship of endocrine stimulation to the development of carcinoma of the breast.

The consensus has been that little relationship exists between chronic mastitis and carcinoma of the breast, but some investigators have estimated that in 22 per cent of the cases of chronic mastitis in which surgical treatment is not carried out the predominant characteristics of extreme epithelial hyperplasia will develop and in from 20 to 30 per cent of these cases the lesions will become frankly malignant.

Nodular regions must be removed for microscopic examination, as clinical impressions are notoriously prone to be in error, even when knowledge and experience are extensive.

TOXICITY OF MECHOLYL BROMIDE

To the Editor:—A girl aged 6 years has received mecholyl bromide 0.2 Gm. daily almost continuously for three years as a stimulant to the smooth muscle of the colon. She has a moderate enlargement of the colon. Is there any risk involved in using this drug in such dosage indefinitely?

Walter G. Bernard, M.D., Detroit.

ANSWER.—Since the patient described in the query has apparently displayed no untoward reactions to the drug, there seems to be little danger in prolonging the drug indefinitely at the stated dosage. Mecholyl bromide is relatively nontoxic by oral administration, and there is no evidence of chronic toxicity with prolonged use: M. G. Peterman (J. *Pediat.* **27**:484 [Nov.] 1945) reports no unfavorable reactions to a continued dosage of 0.2 Gm. twice daily for sixteen months, while doses of 2 Gm. daily for three days were administered without toxic reactions.

PROLONGED ADMINISTRATION OF FERROUS SULFATE AND FERROUS GLUCONATE

To the Editor:—Would there be any harmful effect if a patient was to take ferrous sulfate and ferrous gluconate at the same time in average doses for two or three weeks?

M.D., Massachusetts.

ANSWER.—No. While the average adult oral dose for ferrous sulfate and ferrous gluconate is 15 or 20 grains (1-1.3 Gm.) per day, many patients have taken three or four times this quantity for months without harmful effects. The gluconate and sulfate portions of the molecules are not antagonistic.

Therapeutic doses of iron cause many patients to have epigastric distress and often produce either diarrhea or constipation. These symptoms tend to be more severe if the dose is doubled, but there is no reason to think that a mixture of the two preparations would be more aggravating than would be a comparable amount of ferrous sulfate alone. Some patients, as a matter of fact, seem to tolerate ferrous gluconate better than the sulfate.

The fear has been expressed occasionally that with long continued administration of large doses of iron enough of the metal might be absorbed to have toxic effects on tissues. If this ever occurs, it has not been recognized. Available evidence suggests, furthermore, that the mucosa of the gastrointestinal tract in a major regulator of iron metabolism and can accept or reject iron according to body needs. If this concept is correct, the body protects itself against toxic amounts of iron by refusing to absorb more than it needs.

LATE EFFECTS OF BRAIN INJURY

To the Editor:—A veteran aged 28 incurred a machine gun bullet wound two years ago involving the right temporoparietal area. A tantalum plate covers the skull defect. There is a residual spastic paralysis of the left hand, arm and leg. He has had attacks of unconsciousness which lasted ten to fifteen minutes and recur irregularly at one or two month intervals. These attacks do not have a preceding aura, and the only immediate sequela is nausea for half a day. His history prior to the head injury is entirely negative. What can be done for these attacks?

O. J. Burroughs, M.D., Dongola, Ill.

ANSWER.—The patient has had a bullet injury to his brain with destruction of cerebral tissue resulting in a spastic hemiplegia. He now has attacks of unconsciousness, which are a sign of cerebral irritation just as convulsions are. This irritation may be produced by intracerebral or cortical scar tissue, an accumulation of fluid near the injured area or an abscess. The only way to determine the anatomic results of the injury is by doing pneumoencephalographic studies, which may show whether the attacks are due to scar tissue or to an abscess. The presence of an abscess is always a surgical indication. Depending on their location and depth and the anatomic changes present, scars may also benefit from surgery. However, these procedures may not cure the patient of his attacks of loss of consciousness and these will have to be treated, like convulsive seizures, with anticonvulsant drugs such as diphenylhydantoin sodium, barbiturates or bromides.

RECURRENT ERYSIPELAS-LIKE ERUPTIONS

To the Editor:—Please discuss the prophylactic *treatment of recurrent* erysipelas. Two patients have recurrent attacks in spite of hygienic care of their feet (the infection originates between the toes) and the prophylactic use of *stock vaccines. Sulfonamide* drugs and penicillin have been effective for both during attacks.

J. M. Bodenheimer, M.D., Shreveport, La.

ANSWER.—Recurrent erysipelas-like eruptions, particularly on the lower extremities, are not uncommon and have been the subject of investigation by many workers. In 1926 I. L. McGlasson (Recurrent Erysipelas of the Legs with Dermatitis of the Feet, *Arch. Dermat. & Syph.* **14**:679 [Dec.] 1926) called attention to this condition and presumed that the lesions on the feet and legs were areas of erysipelas or cellulitis caused by the lymphatic transmission of bacteria, usually hemolytic streptococci, which invaded through fissures and erosions of fungous origin.

In Queries and Minor Notes (Recurrent Erysipelas-like Eruptions, THE JOURNAL, July 10, 1943, p. 77) the subject was discussed at length and suggestions were made as to treatment.

In 1944 Morris Waisman (*Arch. Dermat. & Syph.* **53**:10 [Jan.] 1946) read a paper at the Chicago session of the American Medical Association entitled "Recurrent, Fixed Erysipelas-like Dermatophytid." The differential diagnostic points are given as follows: "The streptococcic type of inflammatory eruption of the lower extremities and the erysipelas-like dermatophytid may generally be distinguished by certain contrasting characteristics. Suggesting erysipelas are the following features: (1) longer duration of the attack than generally occurs with the dermatophytid; (2) neutrophil leukocytosis; (3) usual coexistence of higher temperature and more pronounced systemic reaction; (4) successful treatment with sulfonamide drugs, and (5) frequent supervention of fibrosis and lymphedema (elephantiasis) as sequelae of repeated infectious episodes.

The foregoing criteria are the reserve of those associated with the dermatophytid, which usually is manifested by (1) rapid evolution and subsidence, at times within twenty-four or forty-eight hours, (2) leukocytosis inconstant and often absent, (3) afebrile course or one associated with relatively low fever and mild constitutional symptoms, (4) failure of sulfonamide therapy to prevent recurrences and (5) absence of lymphedema, regardless of multiple and frequent recurrences."

Waisman concludes that "recurrent erysipelas lesions on the lower extremities as a complication of dermatophytosis of the feet may be either of bacterial or of fungous origin. In the first instance they are plaques of true erysipelas, the streptococci being transmitted from tineal fissures and erosions by way of the lymphatics. In the second they are an expression of localized hypersensitivity of the skin to fungous products originating from the focus of dermatophytosis."

As the attacks in the 2 cases described in the inquiry yielded to treatment by sulfonamide drugs or penicillin, it is reasonable to assume that the erysipelas-like eruptions were due to bacteria rather than to fungi. Prophylaxis should consist in frequent examination of the feet by the physician. Probably the safest method of continuous treatment to avoid further infection would be soaking of the feet in 1 : 2,000 potassium permanganate solution two or three times weekly. Continuous application of the sulfonamides or penicillin should be avoided because of the possibility of sensitizing the patient to either one or both of the drugs.

ARTIFICIAL LIMBS

To the Editor:—What is the best artificial leg for a midthigh amputation in a man who weighs 180 pounds (82 Kg.) and is 5 feet 11 inches (180 cm.)? Who is the manufacturer? Jospeh J. Lordi, M.D., New York.

ANSWER.—It is impossible to state what is the best artificial leg suitable for a patient with an amputation as described in the query without actually examining the patient. There are many artificial legs for midthigh amputations which are satisfactory prostheses.

The material from which the leg is made has little bearing on its usefulness and efficiency. The skill with which it is fitted and the patience demonstrated by the representatives of the manufacturer in teaching the patient the correct use of the prosthesis constitute the most important factors.

In each of the larger cities there are a number of concerns which assemble artificial limbs under their own trademark. The vacuum socket limb is still in the experimental stage. It is being manufactured by permission of the government agency which developed it by companies in Texas, California, Nebraska and Chicago. This limb is held in place by the suction created in the socket as the air escapes through a special valve. It does not require the use of either shoulder straps or a belt. This limb, however, is not recommended for patients suffering from diabetes, arteriosclerosis, carcinoma or sarcoma with metastases or in whom there has been any infection in the amputation stump. It is ideally suited for a person who has lost a limb as a result of accident, in which there is a well healed and well modeled amputation stump in the middle third of the thigh.

CASTANEDA VACCINE

To the Editor:—Please discuss the use of Castaneda's vaccine for undulant "fever." J. S. Kootsey, M.D., Hot Springs, National Park, Ark.

ANSWER.—The brucella antigen (MBP) that was introduced by Castaneda and Cardenas (*Am. J. Trop. Med.* **21**:185 [March] 1941) apparently is an appropriate vaccine for the treatment of Mexican patients, who suffer chiefly from infection with the melitensis variety. The antigen is composed of soluble materials from all three species of Brucella. Experience is neither large enough nor long enough to permit an accurate appraisal of its value in the treatment of patients infected with the bovine or porcine varieties, the predominant infecting agents in the United States. It has long been recognized that inclusion of the melitensis variety in whole bacterial cell vaccines has made such vaccines less satisfactory for the treatment of patients infected with bovine or porcine strains. The reported Mexican experience with MBP in the treatment of abortus infected patients is encouraging for its small size. There are no reports in the American literature on the use of this vaccine in the treatment of abortus infected patients.

HIBERNATION AND PITUITARY HYPERTROPHY

To the Editor:—An answer to the query of A. J. Alcorn concerning hib nation in animals in The Journal, Jan. 27, 1945, states that the pronoun hypertrophy of the hypophysis during hibernation probably is related the effect of light. What is the source of these investigations on role of changes of day length in the seasonal cycle of hibernating ma mals? Such a relation is doubtful for mammals since they are confir during dormancy in deep burrows, although it is probable for amphibi and fish, which hibernate in ponds and streams.

N. Kalabukhov, Moscow, U. S. S. R.

ANSWER.—Cushing and Goetsch (Hibernation and the Pitu tary Body, *J. Exper. Med.* **22**:25, 1915) reported a hypertrop of the pituitary gland toward the end of hibernation, i. e. befo the action of light could manifest itself. However, A. T. Ra mussen (The Hypophysis Cerebri of the Woodchuck, *Endoc nology* **5**:33, 1921) reported such a hypertrophy only aft awakening and no change during hibernation. There is a di agreement concerning the facts in these two papers.

REMOVAL OF ATROPHIC TESTIS

To the Editor:—A man aged 30 was operated on at 20 years of age for undescended testis. The testis was placed in the scrotum but has fail to grow. At present he complains of vague pain in the region of t testis. The right testis is the size of a marble and slightly tend The left testis is normal. Should this small functionless testis be remove (The patient is neurasthenic and has been told that an operation necessary.) Is there a greater than average danger of malignancy?

B. H. Scott, M.D., Mont[illegible]., Canada.

ANSWER.—The removal of a small atrophic testis which causing pain is a minor operation and can be carried out wit ease under local anesthesia. The procedure is justified if pai is present. However, in psychoneurotic persons there is ofte a fixation on the genital apparatus. Testicular pain is commonl a manifestation of a conversion, especially if the patient's atten tion has previously been called to the fact that there is somethin wrong with his testis. Following the removal of such an orga the pain may persist or be aggravated with localization in th stump of the spermatic cord or higher up in the inguinal cana Therefore the decision to operate may be a difficult one to mak and depends on judgment in the individual case.

The incidence of cancer is greater in the cryptorchid than i the normal testis. This hazard is not entirely eliminated b orchiopexy, since neoplasms occur in testes which previousl have been subjected to operation. However, the incidence o cancer in a testis such as the one described in the query is no sufficiently high to justify its removal for this reason alone.

RECURRENT BUCCAL VESICLES FROM DENTURE

To the Editor:—A white woman aged 64 has had recurring vesicles of th buccal mucous membrane for the past thirteen months. These vesicle are always situated on the right buccal mucous membrane above th right gum line. The vesicles usually run a complete cycle of eleven day after which time they are healed and a new crop appears. The patien is edentulous and wears dentures. All tests, smears and cultures have bee negative. She has been treated by at least twelve other physicians withou improvement. Recently she was given intensive treatment with vitamin complex orally and intravenously for six weeks, along with large dose of thiamine hydrochloride and ferrous sulfate. There was no improvement Please discuss the diagnosis and treatment. M.D., Indiana.

ANSWER.—The oral tissues of a person who wears a dentur may react to the denture. The person may be sensitive to th materials used in the construction of the denture or, if th denture does not fit well, it may be a source of mechanica irritation. The oral manifestation of a dermatologic vesicula condition should also be considered.

In regard to treatment the denture should not be worn fo several weeks to see whether the lesion will disappear. A patch test should be done and the denture checked for mechanica adjustment.

OSTEOGENESIS IMPERFECTA

To the Editor:—What is the present accepted treatment for osteogene imperfecta? Is it safe to advise a couple to have more children wh their first child has a severe form of osteogenesis imperfecta congenit

M.D., North Carolina.

ANSWER.—An accepted treatment for osteogenesis imperfec has not been perfected. This condition is hereditary in son instances, but unless there is a definite family history of t condition there is no reason why a couple should not have ot children when the first child has a severe form of osteogene imperfecta congenita. In mild cases the prognosis is improvement as the child grows older. General hygienic m sures are important, with high calcium and high vitamin There is no specific medication that can be called curativ